R E P O R T R E S U M E S

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THE COMMUNITY COLLEGE IN MENTAL HEALTH TRAINING, REPORT OF A CONFERENCE TO EXPLORE THE ROLE OF THE COMMUNITY COLLEGE IN COLLEGE INSTITUTIONAL RESEARCH WORKERS (2D, PACIFIC GROVE, CALIFORNIA, MARCH 10-12, 1966).

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A CONFERENCE SPONSORED BY THE SOUTHERN REGIONAL EDUCATION BOARD AND THE NATIONAL INSTITUTE OF MENTAL HEALTH WAS HELD IN APRIL 1966, TO (1) PROVIDE OPPORTUNITY FOR COMMUNITY COLLEGE AND MENTAL HEALTH LEADERS TO CONSIDER SIGNIFICANT ISSUES IN THE TRAINING OF MENTAL HEALTH WORKERS, (2) PROVIDE INFORMATION ABOUT DEVELOPMENTS AND CURRENT PROGRAMS IN THIS FIELD, (3) STIMULATE DISCUSSION OF PROBLEMS INHERENT IN THE PROGRAMS, (4) DEVELOP METHODS OF EVALUATING APPROPRIATENESS OF THE NEW JOBS AND THE ADEQUACY OF THE TRAINING PROGRAMS, AND (5) INDICATE AREAS OF RESEARCH. THIS CONFERENCE REPORT INCLUDES THE TEXT OF 13 PAPERS WHICH WERE PRESENTED AT OR PREPARED AS STUDY GUIDES FOR THE CONFERENCE, AND WHICH WERE CONCERNED WITH THE ROLE OF THE JUNIOR COLLEGE IN PREPARING MENTAL HEALTH WORKERS TO SERVE IN FIELDS RELATED TO NURSING, MENTAL RETARDATION, SOCIAL WORK, VOCATIONAL REHABILITATION, AND GENERAL COMMUNITY SERVICES. (WO)

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ED014271

Strengthening Junior College Education through Research & Development

UNIVERSITY OF CALIF.
LOS ANGELES

NOV 30 1966

CLEARINGHOUSE FOR
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CJCA COMMITTEE ON
RESEARCH AND DEVELOPMENT

PROCEEDINGS OF THE SECOND ASILOMAR CONFERENCE MARCH 10-12, 1966

JC 660 316

STRENGTHENING JUNIOR COLLEGE EDUCATION

THROUGH RESEARCH AND DEVELOPMENT

PROCEEDINGS OF THE SECOND ANNUAL CONFERENCE FOR

JUNIOR COLLEGE INSTITUTIONAL RESEARCH WORKERS

Asilomar Conference Grounds, Pacific Grove, California

March 10-12, 1966

Sponsored by the California Junior College Association,

the CJCA Committee on Research and Development, and

The Division of Higher Education, California State Department of Education

Edited by
Audrey Menefee

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FOREWORD

Institutional research in higher education is not a new concept. The Bureau of Educational Research and Service of the Ohio State University was established in 1921 and Rice University was conducting studies of testing even before 1900. True, this early research was done on a small scale by a few dedicated professors using captive college students--but it was the beginning of a most significant development in education.

In contrast, the past decade has seen a rapid development of institutional research in most of higher education. But in the public junior colleges of California it has been only during the last five years that a real thrust toward an organized, on-going program of institutional research has emerged. A serious obstacle has been revealed to the continued success of the movement--the lack of trained personnel to conduct such programs.

The Research and Development Committee of the California Junior College Association was quick to recognize the problem and is attacking it on several fronts. Actual and potential institutional research workers have been identified in all of the public junior colleges and plans are under way for conducting long-and short-term institutes, seminars, and workshops throughout the State over coming months and years to build a strong professional core of researchers. Not the least of the Committee's activities for keeping practicing researchers abreast of current developments is the annual conference reported in this publication.

Many people were responsible for the excellent over-all quality of the program and it would be impossible to credit them all. However, a word of special praise is due Dr. George Ebey, director of the conference, Audrey Menefee, who edited this report, and the members of the Research and Development Committee who assisted so much in the planning and execution of the program. And I know all participants join me in thanking Dr. Lee Burchinal and Dr. Arno Jewett, of the USOE, for taking time from their busy schedules to come from Washington to give us first-hand information about their rapidly developing programs.

The future looks bright indeed for institutional research. The Committee believes that conferences such as the one reported here help give a sense of purpose and direction to this movement. This conference promises, in perhaps a modified form, to continue as an annual activity of the California Junior College Association.

A. Robert DeHart, Chairman
CJCA Committee on Research
and Development
Foothill College

Committee Members:
John Carhart, Diablo Valley College
George Ebey, Pacific Research Center
Ben Gold, Los Angeles City College
Selden Menefee, Los Rios Junior College District
James Nelson, Golden West College
Terrel Spencer, Imperial Valley College
Leslie Wilbur, University of Southern California

First Session

Presiding: John Carhart, Director, Research and Planning, Diablo Valley College

THE YEAR IN REVIEW

A. ROBERT DeHART, Director, Research and Planning, Foothill College

In July of 1964, the California Junior College Association authorized a standing Committee on Research and Development. During the first year this committee met, most of its time was spent in role definition, in getting organized, and in meeting with other institutional research groups in California. The Committee also undertook a research study for the Association on the "50% law," and the Board adopted the recommendations of that study as its official legislative position. Just a year ago, the Committee presented its first conference for institutional research workers here at Asilomar.

Since that first conference, we have made a major thrust forward in research and development activities. In order to accomplish the many things that have been done during this last year, there were four pivotal decisions that the Committee and the Board of Directors of the Association had to make. In reviewing our year's activities for you, I have planned my discussion around those critical decisions.

FIRST PIVOTAL DECISION: Should we "think big" about research and development or continue in a small way?

Our decision here was to think big. Following our conference last spring, we immediately began work on a definitive statement that would establish the CJCA's direction in research and development. The Committee's recommendation to the Board of Directors was adopted unanimously. That policy is summarized below.

CJCA Statement of Policy on Research:

1. The rapid growth of California junior colleges, and the ever increasing responsibility for them to provide education for a larger portion of the State population, have resulted in creating many new problems and needs as well as magnifying some old and yet unsolved difficulties.

2. It is imperative that the junior colleges in California join in inaugurating and promoting a continuous and vigorous program of research and development to cope with the present and future problems and needs which confront or will confront them.

3. The California Junior College Association includes as members all the junior colleges of the State. It has a Board of Directors including representatives from instructional staffs, administrative staffs, boards of trustees, regional associations and the State Department of Education. Therefore, the CJCA is the logical agency to sponsor and promote junior college research, service and development.

4. Although research and development should never become the sole purpose for CJCA, this program is of sufficient urgency and importance to be a major objective and to warrant firm support (including financial aid) and attention.

5. Research and development should be included as a regular yearly budget item of expenditure.

6. Research and development activities of the Association should be directed toward finding solutions for actual needs; it should be practical in nature; it should have as a primary objective the improvement of junior college education and the strengthening of its program of instruction.

Specific Activities of the Research and Development Committee, Projected by the CJCA Board:

1. Stimulate and encourage all junior colleges to sponsor on-going programs of institutional research.

2. Identify critical problems and needs confronting California junior colleges.

3. Solicit and encourage graduate schools and other research institutions to undertake pressing junior college research.

4. Seek financial grants for research projects and employ staff to perform the task, or solicit graduate schools or other agencies to do the job.

5. Cooperate with the State Department of Education and/or other agencies in submitting applications for Federal grants for needed research.

6. Seek ways and means to distribute junior college research findings and information to all junior colleges.

7. Sponsor a program designed to orient and to train institutional research workers.

With this clearly established direction from the Board of Directors, the Committee then sought and received a grant from the State Department of Education which resulted in the report "Critical Problems and Needs of California Junior Colleges." This report, prepared by Basil Peterson, outlined in detail the job ahead and led to the next pivotal decision.

SECOND PIVOTAL DECISION: Appointment of a full-time Research Director.

Once the Peterson report was completed, it was immediately obvious that no substantial attack on these problems could be accomplished using voluntary part-time work of staff in the junior colleges. The Board was quick to realize this and a full-time Research Director was authorized. Thomas B. Merson was recruited for this job, and following his assumption of the office on July 1, 1965 another decision faced us.

THIRD PIVOTAL DECISION: Should our immediate goal be short-term planning with quick results or long-term planning to lay a solid foundation for future activities?

The Committee recommended that the Association take a long-range view of the job to be done in research and development. Dr. Merson will discuss our long-term planning in more detail in his presentation later this evening. Let me summarize by listing the three major projects that have set a framework for an attack on the "critical problems."

Seminar Application: "In-Service Preparation of Selected Junior College Staff for Research of Critical Problems of Junior College Operation and Development"

The Center Application: "CJC Research and Development Center"

ERIC Application: "The Establishment of an Educational Research Information Center Clearinghouse for Community Colleges"

Proposals have been written for these long-term projects and they have been sent to appropriate agencies. We have been assured that, with some modification, the Seminar application will be approved. We may not know about the other two for several months.

In the meantime, two other smaller projects are under way. First, a "model" institutional research office for a junior college campus is being proposed for funding by the USOE. Second, a small grant is being sought which will enable the Research Director to visit all junior college campuses this spring or next fall to assess just what is happening in institutional research. Some support is also being given to other committees of the CJCA that are asking for funds for particular projects.

FOURTH PIVOTAL DECISION: Continuation of the Research Director position for another year.

As we have worked through this year, it has become increasingly apparent that immediate funding of our projects would not be forthcoming. For the amount of money involved in our proposals, quick approval could not be expected. The Committee reported this to the Board of Directors at its winter meeting, with a suggestion that the Board should be deciding very soon whether or not a full-time Research Director could be financed for another year. The Board was in complete agreement that even though approvals might not be immediately forthcoming, the Committee should continue to work toward that end. The Association has committed itself to finding the means for continuing Dr. Merson in his office for another year.

A LOOK AHEAD:

The groundwork has now been laid to fulfill the role the CJCA set for itself in research and development. With the interest of the USOE and the private foundations in educational research, the future looks bright for our new thrust forward. It will mean continued hard work by Dr. Merson and the Committee, and continued cooperation by all the member colleges. This new commitment of the California Junior College Association is an exciting one and promises to be one of the major accomplishments of this decade.

UNIVERSITY OF CALIF.
LOS ANGELES

First Session: Keynote Address

NOV 30 1966

A MIGHTY SURGE FORWARD

CLEARINGHOUSE FOR
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INFORMATION

THOMAS B. MERSON, Director of Research and Development,
California Junior College Association.

A decade or two hence, we may look back on this past year as a turning point in junior college education. This seems plausible because the work we are embarking upon has greater potential than any idea since the idea of free public education. We are going to try to demonstrate that universal post-high school education is possible, practical and profitable. All that stands in the way of accomplishing this goal is finding solutions to a few hundred complex problems of human behavior! We need no magic to accomplish this, we need only to apply the basic tools of science which we've somehow avoided using for far too long. This is the task to which the CJCA Research and Development Committee has dedicated itself.

Idealistic? Yes. Realistic? Yes. Can we achieve such accomplishments? The answer probably will be determined by the effectiveness of our applied research effort. If we accomplish as much in each succeeding year as we have accomplished in the past year, the prospects of success are good indeed.

Will such lofty goals be an asset or deterrent to initiating research? Haven't we recently become accustomed to shooting for the moon? May not one of the deterrents to success of past educational research have been goals which were too prosaic? Need we fear our ability to discipline our steps although our trail leads to heretofore unachieved heights? Isn't this educational moon-shot worth the risk?

Tonight, I'd like to review accomplishments of the past year, anticipate future activity, and solicit your support for the tasks that lie ahead. The intention of my remarks is to give you a current perspective so that during this Conference you may help the Research and Development Committee by affirming our plans or by suggesting modifications in them.

Accomplishments of the Past Year

We may look back upon the year 1965-66 and the next year, as the period of gestation and birth of a new approach to solving the problems of extending unlimited post-high school educational opportunity to youth and adults. A year ago, at the first conference of California junior college institutional research directors, you conceived the idea of attacking our age-old, perennial, persistent, major problems through an organized program of research. At the time you may not have appreciated fully the importance the idea was destined to have. The CJCA Board responded affirmatively and quickly, and through the efforts of the CJCA Research and Development Committee, with support of a grant from the California State Department of Education, a survey of critical needs was made in the spring semester 1965. In his report, Critical Problems and Needs of California Junior Colleges, Dr. Basil Peterson, President Emeritus of Orange Coast College, ably listed in order of priority 26 clusters of important problems which require immediate research study.[1] This study has become the blueprint for our research effort.

While Dr. Peterson's study was under way, the CJCA Board appointed a Director of Research and Development who began full-time service to the Association on July 26, 1965. The Director of Research is advised and counseled by the CJCA Committee on Research and Development, and he reports to Dr. Henry Tyler, Executive Secretary, CJCA.

The CJCA Research and Development Committee, with encouragement from the Board, agreed at the outset that the research recommended in Dr. Peterson's report would require a long-term effort. Consequently, long-range plans were developed which embraced activities extending over a five to ten year period.

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1. Copies of this report are available from the California Junior College Association, Modesto Junior College. ($2.00) The critical problems in rank order are: 1. Effectiveness and Improvement of Instruction. 2. Promotion and Dissemination of Research Development. 3. Drop-Outs. 4. Evaluation of Instructional Offerings. 5. Financial Support. 6. Student Characteristics. 7. Preparation of Instructors. 8. Realistic Counseling. 9. Faculty Loads. 10. Two-year and Four-Year College Articulation. 11. Occupational Training Needed. 12. Instructor Evaluation. 13. Scholastic Standards. 14. Governance of Junior Colleges. 15. Philosophy and Role of the Junior College. 16. Motivating Students. 17. Adult Education. 18. Accreditation. 19. Building Vocational Education Programs. 20. Academic Senates and Faculty Councils. 21. Culturally Disadvantaged Students. 22. Role of the

Four major tasks have been accomplished in the past six months: (1) A "Preliminary Plans" paper[2] was prepared to serve as a basis for decisions about operational strategy; (2) A proposal (USOE No. 6 1668), "In-Service Preparation of Selected Junior College Staff for Research of Critical Problems of Junior College Operation and Development," was prepared and submitted to USOE December 1, 1965; (3) UCLA was encouraged to plan and develop an Educational Research Information Center (ERIC) and a proposal seeking support for this activity has been forwarded to USOE: and (4) A proposal to support the California Junior College Research and Development Center was submitted to USOE February 28, 1966.

In summary, during the past year we have defined the problem (Peterson's report), masterplanned our efforts (Preliminary Plans paper), and now we are midstream in the fund-raising effort. We are anxious to launch the action program soon.

Your CJCA Research and Development Committee has been tremendously effective this year.[3] Without exception, its stand on issues has been "think big." And this stand is correct, for the job before us is mountainous. I will not take time to enumerate the specific ways each individual has pitched in to help with all our tasks. Yet, I cannot move on without paying tribute to the statesmanship of Dr. DeHart and Dr. Tyler. Their perception of and dedication to this task is not exceeded by any of us.

This hasty review does not do justice to the inspired ideas which have been generated by your Research and Development Committee, and I'm sure you'd like to hear more of the planning details. Let me share some of the highlights of our plans with you now.

PRELIMINARY PLANS

The "Preliminary Plans" paper, drafted in August, had the following introduction:

> "The California Junior College Association has embarked upon a serious effort to improve the educational services of its member colleges through an intensive program of action research. This paper outlines plans for (1) organizing a Center for Junior College Research and Development; (2) publishing a Yearbook of junior college research; and (3) preparing junior college staff members for doing research. The thesis of this paper is that the complex problems which must be tackled by the junior college movement can only be solved by a long-range sustained research effort, carried out by competent researchers, and aided by wide dissemination of major research findings.
>
> "If the junior college movement is to make a maximum impact on social improvement, its organization and practices must be methodically analyzed and evaluated in order that its programs and procedures are known to be effective. Systematic, sustained research pointed accurately at its major problems and challenges offers promise of being a powerful influence in charting an effective course of development of these institutions.
>
> "An investment in educational research effort, resources, and personnel at this critical stage of development of the junior college movement is as essential to these colleges as applied research is to modern industrial planning. This paper describes preliminary plans for launching this research effort and pleads the case that the California Junior College Association is well suited to spearhead this effort.

California Junior College Association. 23. Library Standards. 24. The Small Junior College. 25. Schedule of Operation. 26. Salary Guidelines.

2. "Preliminary Plans for Organizing, Conducting, Coordinating and Reporting Research in California Junior Colleges", August 18, 1965. Copies of this statement are available from CJCA Research and Development Office, Bakersfield College.

3. CJCA Research and Development Committee: A. Robert DeHart (Chairman), Director of Research, Foothill College; John I. Carhart, Director of Institutional Research, Diablo Valley College; George W. Ebey, Vice President, Management & Economics Research, Inc.; Ben K. Gold, Counselor, Los Angeles City College; Selden Menefee, Assistant for Governmental Affairs, Los Rios Junior College District; James Nelson, Dean of Instruction, Golden West College; Terrel Spencer, President, Imperial Valley College; Leslie Wilbur, Professor of Junior College Education, University of Southern California.

"The plan proposed in this paper is addressed to three questions: (1) How can an action research program involving 79 cooperating colleges be coordinated and sustained until long-range goals are achieved? (2) How can research results produced by this effort be shared widely with others? and (3) How can competent researchers be prepared and organized into effective task forces?"

The "Preliminary Plans" paper was prepared to inform staff of USOE, foundations, corporations, and others of the importance of the task we were embarking upon, to tell them of the approach we planned to use, and to provide them with evidence that California junior colleges were capable of doing the job well. The major headings of the concluding section of this paper carry the message of the last point.

"The California Junior College Association seems ideally suited to establish a Center to conduct research which will chart the future course of junior college development in the nation for the following reasons:[4]

1. California is the nation's junior college pacemaker.
2. California junior colleges are independently distinctive.
3. California junior colleges seek to put into practice near-ideal programs of extended education for all.
4. Leadership for California's junior college development has come primarily from the California Junior College Association.
5. Inter-institutional cooperation among California's 79 junior colleges is commonplace.
6. Calffornia junior colleges are research ready.
7. California junior colleges provide a laboratory setting essential for productive action research.

"These assets of (1) demonstrated leadership, (2) an extensive system of versatile institutions, (3) a history of eminent success, (4) a pioneering spirit and a desire to innovate, and (5) a well-established pattern of inter-institutional cooperation augurs well for the success of a substantial cooperative research effort conducted under the auspices of the California Junior College Association.

"A vigorous program of junior college action research centered in California now would be very timely because (1) these junior colleges are prepared to do the job ably, (2) other states are creating systems of junior colleges and need documented evidence to guide their decisions, and (3) society is calling on junior colleges to undertake mountainous responsibilities, many of them new products of society's own rapid evolvement. Junior college leaders are confident these institutions can fulfill their varied responsibilities meritoriously. If the privilege of post-high school education is to be extended effectively to the full spectrum of youth and adults by junior colleges, numerous innovations not now commonplace must become routine. For example, to provide programs for low-ability students, to offer occupational programs for all fields of employment, to provide retraining in technological specialties routinely, to guide youth and adults into profitable pursuits in a complex society, will require a level of innovation far beyond anything heretofore accomplished by other institutions of higher education. And these efforts must be coordinated, sustained efforts, involving long-term evaluative studies, longitudinal student-centered studies in depth, and experimentation, if the complex educational problems which have for so long been avoided are to yield solutions."

Many of us thought this paper stated our case in a convincing way. Response was warm and favorable. Expressions of <u>general</u> interest in supporting these efforts were numerous. But it was also clear that more detailed plans would have to be developed before financial support would be assured. For example, two publishing companies were asked to indicate their interest in publishing the Yearbook of Junior College Institutional Research and a Handbook of Research Methodology for Junior College Researchers. After considerable study, both publishers suggested other ways we might do this.

Foundations expressed interest in our plans but suggested that the Research Division of USOE was the logical source for basic support for this effort. The foundations generally asked us to keep them informed of our progress and indicated possible interest in selected aspects of the plan. Business and industrial corporations, particularly through NCI-EC and SCI-EC, were encouraging and very helpful. Al McNay and Don Krotz of Standard Oil Company have been unusually gracious in their help. Time has not yet permitted the Committee to follow through on all their suggestions. Correspondence from USOE staff, particularly Dr. Arno Jewett, was encouraging. CJCA Executive Secretary Henry Tyler met with USOE staff in October to obtain advice about the best organizational approaches to these tasks. Dr. Tyler reported a high level of interest of USOE in all of the proposed activities, and

4. In the interest of brevity, only the title sentences are recorded here.

the Committee decided to prepare a series of major proposals for review by USOE.

THE MAJOR PROPOSALS

I. In-Service Preparation of Selected Junior College Staff for Research of Critical Problems of Junior College Operation and Development

The Committee recognized that each of the problems outlined in Dr. Peterson's report was complex and refractory, and consequently the solutions would require the cooperative effort of large numbers of junior college staff. For this reason, the Committee believed top priority should be given to preparing competent junior college researchers. It was further agreed that plans should be made to give visibility to innovations which the research effort produced. These two goals were combined in this first proposal which was submitted to USOE.

The proposal sought support for the following major components: (1) a series of seminars to train junior college researchers, and to design research plans; (2) a coordinated cooperative effort by selected colleges to conduct research which would seek solutions to the stated critical problems; (3) a series of institutes organized to plan means of demonstrating research-derived innovations; and (4) selected pilot colleges which would demonstrate these innovations.

A. The Seminars

A series of 18 seminars was planned. These were to be held at University of California at Berkeley and UCLA, one seminar each semester for five years. Each seminar would enroll 25 selected junior college staff members, would meet once a month for five 2-day, 10-hour sessions each semester. The seminar content would be largely research methodology and design. Each seminar would focus its attention on one of Dr. Peterson's"critical problems." It would identify the more pressing and basic aspects of the problem; it would design the research required to solve the problem; the seminar participants would become the researchers; the participating colleges would be the laboratories in which the research was conducted; and one of the outstanding seminar participants would be designated as project director with responsibility to coordinate the research until it is completed and reported.

In addition to regular seminar staff, provision was made for several consultant-specialists to assist the seminar participants to perfect their research designs and their plans for data collection and analysis. Availability of funds for travel and stipends would increase the likelihood of attracting competent junior college staff to these training sessions.

Using "Improvement of Instruction" (Priority 1) as an example, the following activities were envisioned for this seminar: Each seminar participant upon enrollment would be prepared to recommend one change which in his opinion would produce marked improvement of instruction. Participants would pool their recommendations and agree upon four or five promising researchable facets of the larger problem. With the help of a special consultant, the trainees would then state these problems in appropriate research form and from this point each trainee would concentrate on perfecting the research design for one of these problems.

In successive meetings the groups, guided closely in principles of research methodology, would agree on needed data and means of collecting, organiziing and analyzing data in several colleges, and organization of the cooperative research efforts. Their approach would be primarily experimental, and improvement would be measured in terms of student achievement in the participating colleges. Special attention would be given in the seminar to a review of known principles of learning, and to the problems posed by inadequate evaluation tools (tests). At the conclusion of the seminar, we would have perfected plans for attack on four or five crucial aspects of instructional improvement, and arrangements would have been made to start the research as soon as funds could be obtained.

It is the belief of the Research and Development Committee of the California Junior College Association that such seminars would have unusual potential for sound planning of research projects. Among the major merits of this approach are the following:

1. It provides opportunity for planning research of complex problems by a group of highly competent individuals who are currently struggling with these problems. Judgments of such a group are likely to be superior to judgment rendered by a single individual.

2. The seminars make it possible to provide a cadre of consultants with exceptional research competence to supervise the design of research plans. This should assure the technical superiority of the designs.

3. The 25 students in each seminar, each a delegate from a separate college and each a leader in his college, will be able to enlist strong support for carrying out the research in their colleges.

Involvement should be spontaneous and widespread.

4. With widespread involvement of 25 colleges various related facets of a single problem can be studied simultaneously, and a wide range of related and impinging studies can be conducted concurrently. Longitudinal studies likewise will be readily possible. Such a massive attack holds promise for successfully assaulting unusually complex and refractory problems which heretofore have been avoided because of the inability to mount a sustained multipronged attack. All of the major problems to be undertaken by the Center are complex.

B. The Laboratories

The colleges which will serve as research laboratories will be selected as the research designs are being developed in the seminars. Usually the colleges selected would be ones with a representative at the seminars. Following the seminars, those assigned responsibility for conducting the research would select the participating staff and make the necessary arrangements. Coordination of related research would be the responsibility of a project director appointed for that purpose.

C. The Institutes

A series of summer institutes (one each year for five years) would be held to organize demonstrations of research-derived innovations in selected pilot colleges. In the main, the summer institutes would derive their direction from the research previously initiated in the seminars and carried out in the participating colleges. However, some of the institute sessions would concentrate their attention on relatively restricted problems where particularly incisive research is required. Examples of such topics would include repair (remedial) instruction, student motivation, or testing.

D. Pilot-Demonstration Colleges

Too often, good research is wasted because it is not implemented and its potential is not adequately publicized. Pilot demonstration colleges are planned to minimize this waste. The pilot colleges will start their demonstrations as soon as substantive research results are available. The relationship of the pilot-demonstration colleges to the colleges which serve as research laboratories will undoubtedly be a close one. There is general agreement among those planning this research effort that its success or failure will depend to a large degree upon our success in convincingly demonstrating the merits of innovation.

The pilot colleges will probably undergo major transformations before they can demonstrate major innovations. Additional facilities, equipment, and staff may be required. They will need to prepare for a stream of visitors, requests for speakers, consultants and reports. But perhaps the major contribution of these pilot colleges will be their ongoing evaluation and improvement of innovations. The more critical research eventually may be carried out in these pilot colleges.

One of the pilot-demonstration colleges might be organized to demonstrate a model institutional research program.

We all had high expectation that funds would be approved to implement these plans. We received word today that the proposal was not approved, as submitted. How we shall reconstruct our plans hasn't been determined.[5] It would seem on the face of it that the title of this address, "A Mighty Surge Forward," was ill-chosen. We do not need to tell you we're heartbroken.

II. The Education Research Information Center

The need for a clearinghouse for fugitive junior college documents, especially research studies, has been apparent to junior college leaders for a long time. Dr. Lamar Johnson's long interest in this field is also well known. It was natural, therefore, to ask Dr. Johnson and UCLA to undertake this responsibility, and they responded enthusiastically.

Fortunately, USOE had been planning to establish 15 to 20 information retrieval centers, each one to specialize in a limited field, and all coordinated in such a way that their respective collections could be made available throughout the nation. The community-junior college was designated by USOE as one of the approved fields for information retrieval, and UCLA was urged to prepare a proposal for review by USOE. Dr. Arthur Cohen was designated as the project director. Dr. Cohen forwarded the proposal to USOE in February.

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5. During the Asilomar Conference, Dr. Burchinal encouraged us to submit a new proposal. This was forwarded to USOE March 23, 1966. It sought support for two summer institutes to train selected junior college staff in the basic elements of research design and statistical analysis. The proposal has since been approved and the institutes are being held this summer at UCB and UCLA.

The objectives of the UCLA-ERIC Center are as follows:

"This proposal is for support to establish a community college clearinghouse at the University of California, Los Angeles, in association with the U. S. Office of Education's Educational Research Information Center project. The clearinghouse will provide a complete information service by collecting, classifying, indexing, abstracting, and disseminating materials of concern to all people interested in community colleges. Output from the clearinghouse will include subject bibliographies, abstracts, tab cards, tapes, and specialized reference lists. The clearinghouse will also build and house a raw document collection. Staff will assist ERIC in the development of an educational thesaurus and will provide reference service as requested."[6]

The proposal has scheduled clearinghouse activities over a three-year period, starting with collecting institutional research, and later extending to theses, dissertations, surveys, reports and journal articles. Acquisitions are planned to begin Summer, 1966.

III. California Junior College Research and Development Center

From the beginning the CJCA Research and Development Committee has recognized the need to establish a center to plan and coordinate efforts of improvement through research in our 79 colleges. A proposal seeking support for this center was forwarded to USOE March 1, 1966. The following exerpts indicate in a general way the rationale of the proposal:

This proposal requests financial assistance for the California junior colleges to launch a persistent effort to seek answers to critical problems which are impeding the universal extension of post-high school education. Funds are needed to plan a systematic research effort, to motivate full participation by all colleges, to coordinate orderly progress of research, and to hasten application of research-derived innovative practices.

Never before have 79 large institutions of higher education, with combined enrollments of a half-million students, banded together voluntarily for a cooperative effort of such magnitude. Never before have junior colleges collectively turned to research for solutions to their major problems. Never before have institutions of higher education sought to mount a collective, sustained attack on problems of such wide application, of such complexity, and of such importance. This project holds promise of demonstrating the merits of research in solving refractory problems, holds hope for reducing or alleviating perennial problems which other segments of education have avoided, and holds expectation for developing model post-high school educational programs and services for millions of adults and youth everywhere in our nation.

A. The Case for the Project

The case for this project can be succinctly stated in the following assertions:

1. Post-high school education is rapidly becoming a requirement for all youth and adults. Clearly, extended education is a requisite for effective citizenship.

2. The phenomenal rate of technological change and the astounding pace of social transformation pose educational challenges of unequalled proportion.

3. Educational problems dwarfing anything previously encountered must be solved if most of our nation's youth and almost all adults have opportunity to develop their talents fully.

4. Society holds high expectation that two-year colleges can extend opportunity for realistic education.

5. Research offers the greatest promise for solving the major problems which now impede universal extension of higher education.

6. Action-research is the most reliable source of guidelines to chart the innovative developments which are essential for these new colleges to fulfill their social mission.

7. To mount a research effort which can carry these responsibilities successfully will require competent research personnel, expertly designed imaginative research plans, and willingness of two-year colleges to test and adopt research-derived educational innovations.

8. California junior-community colleges are ideally prepared to undertake this task. Nowhere else in the world can be found 79 laboratories so ready and able to conduct this great social

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6. Abstract of proposal, "The Establishment of an ERIC Clearinghouse for Community Colleges."

experiment.

The issues are not minor ones. At stake are answers to such fundamental questions as (1) the availability of unlimited equal opportunity to post-high school education (the open-door policy), (2) tuition-free higher education, (3) provision of programs appropriate to varied student abilities, (4) a redefinition of higher education to embrace sub-professional and semi-professional preparation, (5) extension of educational services to all adults, just as such services are now available to all youth in secondary schools, (6) creation of an institution which will be responsive to all major categories of community need and will provide a focal point for community improvement, and (7) demonstration that most problems of individuals and of society are susceptible to solution through appropriate education.

These goals are idealistic, but not impractical. It is imperative that society provide instruments for its own orderly development and evolution. The community-junior college is an American creation assigned the task of doing something about present and future problems of societal betterment. If these community-centered institutions are to furnish leadership for community enlightenment, they must build into the basic fabric of their operation continuous research-based evaluation. Without such provisions, these institutions can only hope to copy others, to make sporadic advancements and to follow society rather than to lead it.

B. Responsibilities of the Center

The Center would assume the following responsibilities:

1. Inspire, motivate, stimulate and energize California's junior colleges, individually and collectively, to undertake institutional research as an essential, integral and continuous part of their total operation.

2. Assist individual colleges and groups of colleges in planning, organizing, staffing, financing, conducting and implementing research on critical problems.

3. Develop sources of competent research personnel, and assist colleges, individually and collectively, to increase the research competence of their staffs.

4. Pool the resources of groups of colleges into cooperative efforts to solve persistent and refractory basic problems which have defied solution by individuals or by individual colleges.

5. Provide stability, by means of assured continuous leadership, to a sustained attack on perennial problems.

6. Collect, compile, collate, analyze, synthesize and publicize information about junior college institutional research studies, in an effort to reduce unnecessary duplication of research and identify major gaps in research information.

7. Demonstrate the merits and potential of research-derived innovations in a way that will encourage, enhance and speed early acceptance and implementation of promising innovations in all colleges.

8. Extend, as well as improve, post-high school educational opportunity by giving special attention to unserved segments of society, and by developing effective educational programs, processes and procedures not now known or practiced.

9. Be a force in extending the sharp edge of inquiry along the periphery of an expanding social movement, whose center rests on the belief that appropriate educational opportunity is essential to the strength and orderly development of our society.

10. Become a source of national leadership for personnel, processes and procedures which can extend realistic post-high school educational opportunity in other states.

What are the alternatives if two-year colleges do not accept responsibility for, or are unable to provide realistic, universal, post-high school educational opportunity? Clearly, the problem will grow more acute and more demanding with each passing year. Indeed, time for substantial planning is already short.

These responsibilities pose a hazard or a golden opportunity, depending on how we react to the challenge. If we hide ourselves from the challenge of developing sensitive and responsive community colleges, or if we complacently expect traditional programs and instruction to suffice, we almost surely doom these institutions to mediocrity, particularly with respect to students for

whom traditional programs are ill-suited. On the other hand, if the faculties of community colleges show a willingness and ability to evaluate and update their efforts, the potential service of these institutions is unlimited. Society insists that the job be accomplished. Modern research makes it possible.

C. Organization of the Center

The Center's tasks and responsibilities will be organized into five divisions:

Research Development will be primarily a responsibility of the research seminars and research laboratories which were described previously.

Research Implementation will be organized in the institutes and carried out in the pilot demonstration colleges.

Research Services include clearinghouse (ERIC) publications, leadership training, internships, conferences, demonstrations, and consultation.

Independent Studies may be initiated by the Center, by other CJCA committees, by other agencies, or may be requested by individual colleges.

Center Administration will carry responsibility for program planning, project coordination, public relations, fund raising, and liaison with other centers and agencies.

D. Anticipated Results

The activities of the Center and its satellite programs are expected to produce the following immediate and long-range effects:

1. Demonstrate the power exerted by 79 vigorous colleges in a cooperative attack on refractory problems.

2. Establish the validity of institutional research as a reliable means of formulating guidelines for developing colleges and their problems.

3. Find solutions to basic, complex, persistent problems which currently impede universal extension of post-high school education and which limit programs that provide realistic education to the full spectrum of humanity.

4. Stimulate search for the most effective post-high school programs and educational processes, and hasten the widespread adoption of the basic principles upon which successful programs are based.

5. Motivate staff and students to previously unattained levels of excellence by creating a desire for systematic evaluation as an integral part of routine procedure.

I wish there were time to describe in more detail our plans for utilizing the combined resources of our 78 colleges in tackling these complex problems. I wish, too, there were time to elaborate on our plans for leadership development which the research findings will make possible. Perhaps next year these can be described as accomplishments, not as plans.

PROJECTED FUTURE ACTIVITY

The news that the seminar-and-institute proposal was not approved will necessarily require changes in our plans. Whatever adjustments are required, we must continue to concentrate our efforts on fund-raising and starting research projects.

We must continue our negotiations with USOE because this is the most probable source of funds in substantial amounts. Congress intended these research funds for the purposes we've described in our proposals. We must continue to hope in one way or another we'll be successful in obtaining USOE support for at least part of our activities. As a first step, we probably need to give more attention to convincing USOE staff of the importance of the community college. We also must be more persuasive in establishing in their minds our competence in carrying out these projects. We may find it helpful to inform our Congressmen about our efforts and to ask them to assist us in our effort.

We have already been asked to undertake three specific studies. The Southern California Industry-Education Council asked us to evaluate the effectiveness of their assistance to junior colleges. The College Entrance Examination Board has proposed a joint study of freshman students

in ten colleges. The CJCA Student Personnel Committee has requested us to do the studies needed to clarify the student probation, retention, dismissal problem. And we can expect to receive similar requests in increasing numbers as time goes on.

Without further delay, we must seek to enlist support from California foundations and corporations. Members of SCI-EC and NCI-EC, especially Don Krotz and Al McNay of Standard Oil Company, have given us helpful guidance along these lines.

A great deal more planning will be required for the projects already started (seminars, research laboratories, institutes, and demonstration colleges). But more pressing is the need to start planning some of our specific research projects. For example, what will be the most profitable approach to research and development in the extremely complex fields of vocational-technical education, teacher preparation and improvement of instruction? When we reach the point where we can describe approaches to specific problems within these larger fields, we may find support less difficult to obtain. Hindsight is always clearer than foresight -- perhaps we should have started with specific projects and developed the long-range plans later. In any case, the excitement of our activity will increase as soon as we confront these specific problems which are so vexing to all of us.

THE ROLE OF RESEARCH DIRECTORS IN FUTURE ACTIVITY

You, the research directors in the colleges, will play key roles in all aspects of this work. The CJCA Research and Development Committee, the CJCA Director of Research, your college administration, and your staff will all look to you for leadership. Let me enumerate a few specific responsibilities you will have.

As we start planning each research project, we shall seek your advice about critical problems and recommended research design. During the planning process, we will ask if your college wants to participate in the study and how your college can contribute to it. If your college is selected as a participant in a given study, we will depend upon you to recommend staff for conducting the study within your college. We hope you will feel inclined to volunteer the resources of your college, particularly when the study in question is of particular interest to your college or where your staff or resources are particularly strong.

When Project ERIC is launched, we will want to collect all pertinent studies. You will probably be asked to do this at your college. Perhaps you will want to start this collection now.

The Research Committee and the Research Director encourages you to send to them at any time recommendations for specific studies which should have high priority.

As soon as possible, the CJCA Director of Research intends to visit each college to describe plans, to identify previously completed studies, to become acquainted with strengths and interests of individual colleges, and to identify potential research leadership.

We know that soon after we start research of almost any of our critical problems, we will become acutely aware of our limited evaluative instruments and instructional materials. I would urge you to begin to stimulate staff within your college to think about how these materials can be produced.

Through our various projects we will be striving to make research become an integral componen of <u>all</u> our activities. This will require salesmanship on your part. We will be testing everythin we do, and in the process sacred cows will be slaughtered by the dozen. You will have to exercise a high level of diplomacy because all slaughter is traumatic. If, however, we fail to cull out our ineffective practices, there is little reason to conduct our research.

Research is a long, hard, tedious process. We will all need a liberal supply of tenacity to unravel all our yarn. And let's determine not to by-pass the important studies just because they are snarled.

But most of all, if our work is to be at a level of excellence, we need you to produce a stream of innovative and creative ideas.

There is more to do than all of us can do. Cooperatively, we can do much more than we can do alone. This is not a one-man job or a job for only a few. It seems probable that we may be able to demonstrate through research activities of the next few years what we've all learned in other efforts, that the power of cooperative effort in the California Junior College Association is unlimited.

Second Session: Institutional Research

Presiding: Terrel Spencer, President, Imperial Valley College

INSTITUTIONAL RESEARCH IN THE STATE COLLEGES OF CALIFORNIA

CALVIN E. WRIGHT, Associate Dean of Institutional Research,
California State Colleges

This will not be a theoretical presentation, as I want to give you a picture of how the state college system is operationally defining institutional research, in terms of what the colleges are really doing

IR ON THE CAMPUSES

I. Organization

Actually, there is little uniformity in how the job is organized on the different campuses. Institutional Research for us is only about five or six years old, and we are having the growing pains that are familiar to all of you. As of now, 17 of the colleges have individuals identified as research directors. Five are actually called directors; seven are called executive deans; three are other kinds of deans; one is a vice president; and one is administrative assistant to the president. Only a few of the offices are staffed by more than one person.

II. Responsibilities

The duties of these people vary as much as their titles. Most of them direct or coordinate their campus computing center. Research activities are limited by the fact they all have other duties which may restrict institutional research activities to about ten percent of their time. Characteristically, they collect or coordinate data for presentation to the chancellor's office; they make enrollment projections; and they may make some local studies such as space utilization and student characteristics. Most student research is handled by campus test officers, however, and IR directors are not much involved.

III. Plans

In order to meet immediate and future needs we are attempting to establish an Office of Institutional Studies on each campus as soon as possible, and assign to that office the function of coordinating institutional research and the administration of equipment and personnel now assigned to the IBM and computer centers. Specifically, we would like to see these new positions created:

1. Director of Institutional Studies, essentially a staff position responsible to the President and/or Vice President. The job description for this position is not yet available.

2. Director of Computer Center; responsible to the Director of Institutional Studies.

3. Supervisor of IBM center; responsible to the Director of Institutional Studies.

IR IN THE CHANCELLOR'S OFFICE

I. Organization

The Chancellor is responsible for all general, legal, governmental, and public affairs.

The Executive Vice Chancellor has academic planning, institutional relations and student affairs. The Institutional Research division reports to the Executive Vice Chancellor.

The Vice Chancellor oversees business affairs. He also has auxiliary operations planning, budget planning, and college facilities planning.

The Assistant Chancellor is responsible for faculty and staff affairs.

A. Functions of Division of Institutional Research

These functions have been approved:

1. Under administrative direction of the Chancellor, to plan and direct a program of research

and studies, both of a continuing and periodic nature, affecting policies and administrative decisions on long-range plans for college development, education programs, organization and staffing, operational effectiveness, building and budgetary programs, and similar subjects.

2. To direct the collection and analysis of routine and special data on students, staff, facilities, and other aspects of the college programs.

3. To assist the colleges in development of their institutional research programs and to assist the staff of the Chancellor's Office with appropriate research designs.

4. To work with State agencies in the establishment of long range and short range enrollment projections.

5. To keep informed of programs and developments in institutional research in other colleges and universities and to inform the state colleges.

6. To direct any data processing center that may be established for the Chancellor's Office and to coordinate this center with similar operations in the colleges.

7. To build and maintain a working-technical library for the staff in the Office of the Chancellor.

The Institutional Research Division is charged with supplying information requested by all the Chancellor's Office divisions on such subjects as faculty and staff affairs; facilities planning; budget planning; academic planning; and institutional relations and student affairs. It must also supply information as requested by the Board of Trustees, including admissions studies, site selection studies, and year round operation. It must supply information requested by other state agencies including the CCHE, Finance, and General Services. It must supply information requested by the Legislature or Legislative Analyst, such as the feasibility study of registration and class scheduling.

B. Activities of the Division of Institutional Research

The Division recently completed an internal reorganization based upon task-oriented rather than project-oriented subunits. The major responsibility for any project or study is assumed by one of the units, depending upon the specific tasks required to complete the project, but all units may be involved.

1. Analytical Studies

This unit has the major responsibility for projects or portions of projects involving systematic compilation, collection, and classification of facts or data. Tasks deal with information gathering, demographic studies, projections of population trends, and other descriptive and comparative statistics. Although many of the projects are of a routine and periodic nature, they supply the basic statistical data required for the efficient day to day management of the state colleges.

Continuing projects of this unit include periodic revision of support budget and capital outlay enrollment projections for individual colleges; faculty and administrative salary surveys of CSC's and out of state institutions; the preparation of faculty staffing worksheets and reports on faculty load, research, promotions, separations, and recruitment; analyses of course section report data; preparation of the Statistical Reports of the California State Colleges (SU Session, extension, term registration reports; three weeks reports; academic yr. summary); and responses to numerous questionnaires and surveys from other agencies (10 annual surveys plus about 25 miscellaneous surveys per year). Other projects include the development of data on the need for additional state colleges and the selection of new campus sites, study of student space and occupancy utilization, the preparation of a physical plant inventory, the analyses of full time enrollments, and the preparation of enrollment reports. Data were also collected for the California Public Higher Education Cost and Statistical Analysis conducted by the Coordinating Council for Higher Education.

Other activities of the unit include an experimental program in projecting state college enrollments; analysis of Fall full time enrollments, all segments, 1955 to present; analysis of institution of origin of new graduate students; and analysis of enrollments by level of instruction, type of instruction, and time of day.

2. Research Unit

This group has the major responsibility for projects or portions of projects involving research in the traditional scientific sense. Included are applied, basic, and developmental investigations

and research. Where appropriate, it utilizes the more advanced statistical procedures. Its empirical orientation stresses the application of scientific method to the problem areas studied.

a. Admissions study: Recently, the first portion of the California State Colleges 1963 Admissions Study was completed and a technical summary prepared. The recommendations contained in the report led to the adoption in December, 1964, of new first time freshman admissions standards that were effective in the Fall of 1965. By the use of a weighted combination of high school grade point average and a score on either the American College Test or the Scholastic Aptitude Test, the new standards select those students with the greatest probability of academic success in the California State Colleges. A minimal weighted combination or "eligibility index" is used to limit eligibility to the upper third of California high school graduates, as required by the Master Plan For Higher Education.

Other portions of the Admissions Study were also undertaken. These included analyses based upon the full freshman year; a recalculation of the major results by individual state colleges; an evaluation of the effects of including, in the calculation of the high school grade point average, those courses taken in the ninth grade summer session; and the determination of freshman standards based upon five semester high school grades (i.e., excluding the final semester). Provisions were also made for the longitudinal continuation of the study, and for the investigation of student differential success in the various state college academic disciplines.

b. Transfer student studies: The Research Unit also continued the investigation of transcript data for 1960-61 high school graduates; began the initial planning of a transfer student admissions study to be based on 1965 admittees; continued the evaluation of the American College Test and the Scholastic Aptitude Test (equivalencies; percentiles); and evaluated academic probation-disqualification statistics.

Pending projects related to transfers include a report on Freshman Eligibility of First Time Transfers; a 1961 Graduate Record Examination Study; CCHE Reports on Student Admission, Diversion, and Probation-Dismissal; a follow-up study on Fall, 1965, first-time freshmen; and evaluation of data useful for student guidance and sectioning.

(1) The 1965 transfer student admissions study: Design and data requirements of the 1965 transfer student admissions study are being developed. Data is to be related specifically to the 1963 freshman group in order to determine transfer admission standards that will admit applicants comparable to native state college students (those who entered as freshmen) at equivalent levels. Data requirements for the study will be based on an assessment of the transfer student information available at the campus level. When this step is completed it will be necessary to backtrack and retrieve the data for fall 1965 entering transfers. It is expected that procedures similar to those of the 1963 freshman admissions study will be used.

(2) The 1965 high school transcript study: The Coordinating Council has requested that "The state colleges and the University of California ... submit a report of a sample study of transcripts ... of public high school seniors, throughout the state, graduating during the 1964-65 school year ... in order to evaluate the selection of students from the upper one-third of high school graduates in the case of California State Colleges and the upper one-eighth of high school graduates in the case of the University of California." To date, approximately 21,000 of 22,000 transcripts have been received. It is anticipated that this study will include the following phases:

Phase 1: Most of the transcript information will be coded in a form to permit analysis by electronic computers.

Phase 2: The proportion of 1965 high school graduates eligible for admission on the basis of current standards will be determined and reported to the Coordinating Council.

Phase 3: If necessary, an adjustment of the admissions standards will be made to assure continued selection from the upper third of high school graduates. This will require repeating portions of the 1963 admissions study analyses using the 1965 high school graduate sample in place of the 1961 group used in the original study.

Phase 4: More extensive study of the characteristics of the sample will be made, including comparison of the 1965 group with the 1961 group.

3. Systems

The third unit in the Division of Institutional Research is Systems. This unit is responsible for the broad area of systems analyses functions required for the successful continuation of present methods of collecting, storing, retrieving, processing, and reporting data for informational

purposes, as well as the planning, development, and implementation of new methods. Tasks include the development of an information processing system, the evaluation of data processing equipment and personnel requests, and long range data processing planning and coordination.

a. Information Service Guide: In March 1965 this Guide was issued by Systems to replace the Statistical Reports Manual. The Guide provides to all colleges and the divisions of the Chancellor's Office a single reference document for relevant policy statements, data definitions, and systematic operating procedures for the data processing and reporting operations of the California state colleges. It will act as a service to users by providing a reference guide to predefined data and operational procedures as they are related to the process of reporting internal information. The Guide provides a description and documentation of the various elements which comprise an Information Processing System, and presents a standardized approach for establishing uniformity in the definition, collection, filing, processing, retrieving, and reporting of data for information purposes.

Related Systems projects during the year included the budget review of items related to institutional studies; preparation of a report on automatic data processing problems and needs; maintenance of the Information Service Guide; preparation of an ADP equipment inventory listing; and a report on registration and scheduling.

b. Information systems planning: Current and pending projects include:

(1) Planning, formulation, and coordination of ADP work study groups

(2) Development of ADP system within Chancellor's Office

(3) Development of systems design standards

(4) Coordination and development with statewide federated information system

(5) Development, implementation and coordination of campus ADP subsystems integrated as a system-wide information system

4. Data Operations

The fourth unit in the Division of Institutional Research is Data Operations which performs the role of an automatic data processing service unit for the Division. The functions are directly related to the operation of electronic data processing equipment or to the operational steps required. As a service unit Data Operations is involved in most projects but has major responsibility for only a few. As the staff expands, this unit will become a service group for the Chancellor's Office as a whole, and will be responsible for the maintenance and operation of any EDP equipment obtained.

C. Consultative and Advisory Role

The IR Division has as its goal the supplying of information to policy people in such a way that the best policy decisions can be made. The Division makes Master Plan recommendations related to such diverse areas as validity of admissions requirements for freshmen and transfers; differing standards for the varying programs; distribution of lower division students; utilization of physical plants; enrollment limitations and projected plant needs for new campuses; faculty supply and demand, and faculty salaries and fringe benefits.

This means that Arthur J. Hall, Dean of Institutional Research, and his staff must keep in constant contact with colleges and agencies requesting information. Art Hall or his representative attends weekly planning meetings of vice chancellors and deans and chiefs; board committee meetings and board meetings; the Chancellor's council; and CCHE meetings, especially those of the Technical Committee on Admission, Retention, and Transfer. Art is also one of eight members of the ADPAC to assist and advise on ADP program and policy matters.

Members of the IR staff attend, as either participants or resource persons, meetings of deans of students, associate deans of admissions and records, executive deans, and many other statewide groups. They have periodic meetings with Directors of Institutional Studies, and with the staff of the Center for the Study of Higher Education.

* * *

DISCUSSION

A question was raised about having both the director of the computer center and the supervisor of the IBM center report to the director of institutional studies, as proposed by Dr. Wright. He replied that the research director needs to work with the computer installations, and "We feel we shouldn't have two separate data centers going their own separate ways, so we proposed putting them under one head."

The participant argued that if the IBM supervisor reported to the director of the computer center, it would permit one rather than two reporting relations, and might help prevent the IR director's position from becoming defined as statistics gathering rather than problem solving. Many offices not related to institutional studies make use of the computer center, he pointed out. He had a "hunch" that if your research man has too many gadgets to supervise you may wind up with a director who knows a great deal about gadgets but not so much about research.

Another participant, referring to Dr. Wright's mention that selective procedures were being developed for junior college transfers, asked "What information do you have that indicates the need for revised procedures?" Reply was that the state colleges are now selecting from the top 44% of high school graduates, not the upper third. Freshman standards will gradually rise as CCHE guidelines are adopted. If native student standards are raised, it will be necessary to look at upper division students transferring from non-selective institutions, to see whether they are still competitive. "If we had no admission standards," he said, "we would have a big back door whose traffic would upset the balance being established by the Coordinating Council. We are making a continuing study of the 1963 group, and we are adding 1965 transfers to this sample. We'll compare the target groups, and may find no need to change our transfer standards."

Asked about the performance of transfer students after their initial dip in grade-points, Dr. Wright said their record seems "fairly good." "Roughly half of all state college graduating seniors seem to be transfer students," he said. And already more transfer students than entering freshmen are coming into the state colleges. Transfers last year numbered 15,000, compared to 14,000 freshmen.

Concerning the new high school transcript study, the speaker pointed out that the state colleges, junior colleges, and university would all be able to look at the actual contemporary flow of students in California higher education. A total of 22,000 students will be followed, as they move from one institution to another. No one segment of the tripartite system can accomplish this pursuit alone, Dr. Wright said, and he asked for junior college cooperation in the study. Its design is not yet complete, but the advisory committee is discussing inclusion of junior college personnel. A participant recommended that John Lombardi, president of Los Angeles City College and chairman of the CJCA articulation committee, be recognized as a logical resource person for the transfer project.

INSTITUTIONAL RESEARCH IN THE UNIVERSITY OF CALIFORNIA SYSTEM

C. ROBERT PACE, Professor of Higher Education,
University of California at Los Angeles

I don't have any real solutions for institutional research, but I can point with alarm to some of our shortcomings.

EXISTING SITUATION

In these times educational systems need good information, collection and retrieval systems. These are still in a pretty primitive stage in most institutions. At UCLA we spend a lot of time transferring data from old-fashioned files onto new-fashioned cards and tape. We have to hire 17 clerks to go through 17 old-fashioned files, for every question raised. And then we hope the answers will apply to the next question. It isn't sensible, but it's the prevailing condition.

The research that many of us do is accounting. Accounting isn't bad, but it's not research. We work with low-level machines and we have no uniform recording, no systematic accounting. I personally wouldn't call it research. You need the physical and mechanical capacity before you can ask the right questions in the first place, and hope to get the right answers from the machines. Each campus in a state-wide system should have this capacity, and they should all work on the same numbering and accounting system to feed uniform information into the central office.

It is an exceptional case when a piece of research is done by the persons who are employed to do institutional research. Most institutional research today is being done by big testing organizations like the National Merit Scholarship Association, the NORC at Chicago, the ETS. Except for Newcomb's current work at Michigan and perhaps McConnell's projects at Berkeley, very little institutional research is being done. Some large teams and centers are busy on individual campuses, but usually these avoid any direct relevance to the campus where their studies are located.

In some places, individual professors of psychology, sociology or education are conducting their own relevant research. The best of this gets known nationally - at least by those in the particular discipline - sooner or later. Monographs and special reports are replacing the older journals, and this gets information out sooner. Oddly enough, neither the work nor the findings are usually known to faculty and administration on the local campus. More local visibility might help create campus interest in institutional research laboratories. Deans could help in this effort.

THE IDEAL

An institution should encourage faculty members to ask embarrassing questions, and then give them the resources to help them find the answers. Most research in the final analysis is administratively determined, yet there is the embarrassing condition that a genuine research person wants to do what he wants to do; he is not comfortable "turning something out" for the president or dean.

What I'd like to see is an institutional version of the floating crapgame. In this game the location changes constantly, due to externally unsympathetic forces; the players remain much the same, and they cut into the game after getting word where it is being played. I'd like to see an identifiable <u>place</u> on every local campus where the game of institutional research is always going on and where we could have floating <u>players</u>.

Another thing we could use in this business as standard equipment is a dither. You may recall that in World War II British scientists and engineers found that every machine or system needs a dither to keep it in continuous vibration. They discovered that without a dither all systems would develop malfunction. Colleges need some kind of dither to keep their systems vibrating well, but so far we're not organized to maintain one.

STUDENT STUDIES

At UCLA I've been trying to interest people in making more use of students as an informal advisory source. We hope to develop a project next year using opinion-type questions and having students fill out three or four at a time when they register.

We have been putting the question to faculty and administrators, "If you could ask entering students four questions, or get from them four opinions, what would you ask?" We're developing opinion poll type items and will select about 100 of them to assign randomly to individual students. (It will be "another little card" to fill out at registration.) But whom do we have who can decide what questions to ask? The institutional research director or the high-level administrator? You usually know by their questions what they think the answer should be. And who is to deal with the data that we collect? Institutional research people cannot, in many cases, because they are really systems analyists or data processing specialists, not researchers. We seem to need a different kind of institutional studies staff than the typical one.

We are trying out local-problem studies not related to accounting, planning, or student projections. We are working, for example, on "graduate student stress" problems. And on freshman loneliness; freshmen will keep a log of such things as the first words they exchange with a faculty member, among other things. We are also doing a study of "peer group influences," concerned with the objectives of students.

We need better criterion measures against which to look at our institutional practices. What is the real relation, if any, between grades and instructional effectiveness? Does instructor effectiveness relate to faculty-student ratios, really? We know the ratio is going up. Its defense is an economic one, but that's only one criterion. The issue should be evaluated against other criteria such as the personal development of students, or their general maturity.

Another problem is early student commitment: psychologically, we know that early decisions to specialize are related to personality constriction, but many of our official institutional policies are designed to encourage or even force an early choice, an early commitment.

I wonder how many UCLA physics students have never had high school physics, or advanced mathematics? I suspect the number is infinitesimal. How do the other students do in physics, then? How do they perform in school, and afterward? The situation has come to this: we have students identifying themselves with the "queen of the sciences" who are making the study of their science increasingly inaccessible to non-specializing students all over the United States. There is little "vibration" in this system. It needs a dither.

When an administrator asks what all this has to do with his business of managing an institution I sometimes quote Harold Lasswell. Asked for his view of our role as behavioral scientists, he said our responsibility was to "complicate the task of the decision-makers."

* * *

DISCUSSION

A participant asked Dr. Pace to describe what he thought would be a good set-up for an institutional research office. He replied he would like to see a research laboratory wholeheartedly supported by the college administration. It would consist of a very small number of persons, perhaps only one fulltime and three or four part-time persons, some clerical help, and half a dozen graduate student assistants. This office would report to faculty committees and the faculty as well as to the administration. Perhaps it should be part of the faculty senate. In any case, unless such an office is close to the faculty, they will neither support nor contribute to it.

Asked about his role in the UCLA junior college environment study, and what the study was supposed to show, Dr. Pace said his interest was finding out if by getting data from a national sample he might learn where junior colleges differed from four-year colleges in significant ways related to the students. There is available now, from the college environment scales of UCLA and over 200 others, a large pool of information upon which to draw. Vernon Hendrix was seeking more to discover the image of the junior college held by faculty and students, and how this related to the status of technical education in the junior college.

A participant asked how the concept of a Title IV regional laboratory fitted into his concept of a floating crapgame. He agreed that the regional laboratory invites a flexible and changing population of players. "My general impression is that their purpose is to improve the practice of public school education, to get new ideas used, to shorten the lag between knowledge and its use, and to serve as training institutions. I don't see them heavily involved in research."

Concerning junior colleges' lack of resources for research and their tendency to look outside for generalizations adaptable to their special needs, he was asked if a concentration on local campus issues (at UCLA or other universities) would provide findings generalizable to junior colleges. Reply was that if research were faculty-initiated instead of administration-initiated, it would be at least moderately theory-based. In this case it would have broader applicability.

RESEARCH IN INDUSTRY DESIGNED TO IMPROVE OPERATIONAL EFFECTIVENESS

DONALD P. KROTZ, Vice President, Chevron Research Company

Preceding talks have freely used the term "institutional research." I have noted that in the Peterson report on Critical Problems and Needs of California Junior Colleges institutional research is defined as "research carried on within an institution (college) which leads to action or to recognition that no action is needed; practical or applied research." This is the same report that listed the problems in R & D for junior colleges and established a priority status for the 26 most pressing problems. In telling you about research and development in industry, I would hope to bring out some of our research and development practices and procedures that may be applied either directly or with slight modification to solving many of your list of critical problems.

I will be speaking from a personal background in industry, and this obviously means that it will be strongly flavored with examples from the petroleum industry. However, my work experience and views are not derived solely from the Chevron company. I hope that the effect of broad participation in technical society activities, community activities, the American Management Association, Society for Advancement of Management, and the Industrial Research Institute will serve to keep my remarks from being too provincial.

STANDARD OF CALIFORNIA

To set the stage for some of the discussion to follow, I will discuss our Standard of California organization. This is a national and international integrated petroleum company, with operating companies, small and large. Chevron Research is one of these operating companies. Its job is to take care of the technical needs of the total organization.

I. Chevron Research Company

The Chevron Research Company began with a staff of ten in 1921, to tackle a terrible problem of corrosion in our processes. Our small group made immediate progress in controlling the process and in cutting costs. This is what made us acceptable to management.

Our main business in Chevron Research is covered by an R & D budget approved by the Executive Committee of Standard of California. About two-thirds of our over-all effort is covered by this budget, and the work is in four major areas:

1) Oil Field (finding and producing)
2) Processing (better and cheaper ways to run refineries)
3) Petroleum products (1200 different products now)
4) Petrochemicals (a newer field, and growing fast)

We also perform a variety of work which we call technical service at the request of the operating companies, and for this we charge our actual costs.

A. Research Concerns

About a third of our jobs come to us from the operating companies. Let me give you some examples:

1. A sand consolidation process was developed following research into a costly problem of loose sand formation that was causing wells to be lost. We discovered that an injection of resin and additives would stabilize the sand and provide spaces for oil to flow through. Making this process effective at 2,000-6,000 feet below ground was a major problem, but we have 75 wells now back into production.

2. We had a stroke of luck developing an experimental offshore-platform to withstand hurricanes in the Gulf of Mexico, when a hurricane brought 40-foot high waves to test the platform. Recent hurricanes have caused no damage to our offshore equipment.

3. We have conducted exploration studies on the problem of tracing underground deposits, and have demonstrated the usefulness of fossil spores and fossil pollen in this task.

4. Our basic research in hydrocracking catalysts led to building of a $90M isomax plant at the

Richmond refinery.

5. We're still working on smog devices, but the problem is not licked yet.

6. In experiments with asphalt mulch on bean sprouts we have shown that the mulch loosens and warms the soil, resulting in much earlier plant growth of beans.

7. We are constantly working on quality testing devices for gasoline and oil, such as ashless detergent oils.

8. Our research has been indirectly responsible for Chevron becoming a major supplier of detergent products to soap companies. Earlier detergents were not dispersing easily, and foam piled up on the water at sewer outlets. We developed a bio-soft detergent that bugs would chew up so the foam would not form.

. For each such applied research problem that we tackle we set up a project outline and work through these steps: 1) problem definition, including technical and economic considerations; 2) information gathering and analysis; 3) investigation of alternatives; 4) laboratory testing (this follows necessary desk work, and involves the more expensive phase of initial tests); 5) field trials; and 6) application.

I must confess the attempt to follow this project outline has more than once led to such observations as "What we need around here is brand new ideas that have been thoroughly tested!"

B. Broad Involvement

In order to keep our research efforts oriented to the company needs, we have directly involved key members of our operating company organizations in the development of our research programs.

We try to get people from other parts of the corporation involved so we can communicate with each other. We seek out persons who are expert enough to be able to feed back and contribute to the project. We have a member on the research committee from each operating company that we serve.

An annual program is set up to review each of the jobs coming from these operating companies, and they are kept actively involved in evaluating our services in terms of cost and usefulness to them. We choose personnel for our research teams who have experience appropriate for each task. We are not in the business of training greenhorns but we may include in each study one new person to broaden his perspective of company operations.

C. Institutional Research

In addition to a major effort in scientific and engineering research in both Chevron Research and in Standard of California, we do a wide variety of R & D which comes more directly within the scope of "institutional research." We do this under a variety of names, including organization planning, cost control, operations research, process planning, market research, quality control, process analysis, personnel studies, and the like.

Our schedule is programmed in such a way that each segment of the operation is covered at least once every three years. We examine the utilization and distribution of reports, to keep them minimal but effective; the use of computer operations, to see that we make full use of computers but still stay in control of them (keeping the computers from running your research program is a constant hazard when you go into them on any significant scale); records retention practices; safety programs; night-shift operations; supervision; personnel. Incidentally, we try to use junior college graduates as laboratory technicians to release professional personnel from the more routine technical work.

A separate staff is examining our own research operation, to see where we can get rid of staff functions not essential to our basic job.

1. Personnel Studies: Creativity

We don't always win, but even when a project fails to give us all we wish, we learn something. A creativity study was launched about ten years ago, which might interest you. The search for creativity is a big problem for us, as it is everywhere. What we need are scientists who are creative enough to keep ten technicians busy apiece, and we want to discover how to recognize such potential for creativity in its early stages, in high school or junior college. We set up a committee to select a project director, and interviewed a number of nationally known social scientists at the big universities. We finally made an arrangement with Dr. Morris Stein at the University of Chicago, because he already had a project going on creativity. We got subscriptions from our

member companies to fund the study, a long-range and fairly expensive one.

Dr. Stein came up with some results, but not the solution to our problem. He identified certain characteristic aspects of the creative process, for example: 1, the problem sensed; 2, data gathering; 3, logical thinking; 4, frustration (or "tantalization," since this part is not unpleasant); 5, insight; and 6, verification. Stein published several books and developed tests that are used now by the Chicago testing companies. But what our member companies got from the study was mostly the knowledge that their old empirical methods of personnel selection were as good -- at least as valid -- as any others. They don't use Stein's tests themselves.

2. Personnel Studies: Dropouts

We have a 'drop-out' problem, too. In examining the loss of 40 Ph.D's in Process and Engineering over a ten-year period, we discovered that 12 had left to enter or return to teaching, 21 had taken other employment, 6 had been transferred to other parts of the corporation, and one was on military leave. Nine others had been terminated by the company, representing bad guesses in the original selection. Thus fewer than 30 were retained from the group of 79 Ph.D's who were originally recruited from among 500 to whom offers were made. (And the 500 offers were made only after careful review of 3000 files.)

II. Industrial Research Institute

An example of R & D carried out by joint action with other companies is illustrated by the activities of the Industrial Research Institute. Its membership involves 200 research companies, representing 50% of the United States industrial research effort. Its purpose is to promote cooperative efforts for improved, economic, and effective techniques of organization, administration, and operation of industrial research. It is an extremely helpful organization in that it permits us to measure our own effort against that of others.

III. Summary

R & D is carried out to help our company keep its product lines competitive, provide for future growth, and keep costs at the lowest level consistent with optimum production of needed goods and services. I will hazard a guess that in industry we have many problems in common with your junior college R & D effort. Your product is trained minds which can meet certain types of requirements -- you do not run fact mills. Your list of 26 high priority problems can be solved by using many of the same techniques that we use. There is need on your part to do the equivalent of our market research, with possibly some follow-up in the form of "technical service." Undoubtedly you will benefit from systematically involving those in charge of various school divisions with the people from industry and business who represent "clients for your products."

* * *

DISCUSSION

In response to a question about philanthropies supported by Standard Oil, Mr. Krotz replied that the organization does not engage in philanthropic activities as such. It gives aid to colleges and other institutions only where this assistance can be justified to the stockholders in terms of economy or general community development. "MIT and Cal Tech set standards of teaching research that are excellent, and emulated by others, and we believe they should be supported for this reason. We also on occasion give grants that are related to the number of trained persons we can recruit from certain institutions."

Asked how his organization makes its specific project selection, Mr. Krotz cited the Industrial Research Institute's recommendation that industrial research workers should have access to occasional concentrated review sessions. The Harvard Business School was selected, and it developed a project which has been oversubscribed each year. The organization also supports seminars as an educational service for its own people. This program has been extended now to providing training seminars for potential research people. Participating companies always pay the costs of these programs by subscription.

Asked if Chevron Research has its own computer center, the speaker said the home office has a 7094 set, with 1401 satellites all over the country. Houston will soon have its own computer center specifically to serve the oil fields. "We look forward to having a small computer on each engineer's desk to serve as a miniature memory storer, so we are not getting ourselves loaded down with giant computers."

Third Session: Impact of Legislation on Junior College Research and Development

Presiding: George W. Ebey, President, Pacific Research Center, Inc.

FEDERAL SUPPORT FOR RESEARCH AND DEVELOPMENT AFFECTING THE JUNIOR COLLEGE

ARNO JEWETT, Acting Chief, Curriculum Branch, Division of Higher Education Research, Bureau of Research, U. S. Office of Education, Department of Health, Education, and Welfare

Alexander Pope in his "Essay on Criticism" declared that "A little learning is a dangerous thing" and that "Fools rush in where angels fear to tread." Well, I'm not rushing into the seething area of junior and community college education without trepidation. I have never served on the faculty of a junior college, but I have sat in on some meetings with Tom Merson and I have read a lot of junior college literature which he has provided me.

Let me begin by outlining what I intend to do during the next thirty or more minutes so that you may sit back and relax. First, I shall describe the organization of the Division of Higher Education Research, USOE, and the role of two of its three branches. Next, I shall outline the process which our Bureau of Research employs in reviewing research proposals. Finally, I shall discuss the priorities for research support which we are developing with the aid of leaders like yourselves. And I will hope there will be time for discussion after all this.

With the reorganization of the Office of Education last July, all research authorizations provided by law were housed in the Bureau of Research. These authorizations included Public Law 531, "The Cooperative Research Act," 1954, as amended by Title IV of the Elementary and Secondary Education Act of 1965. This legislation constitutes the major part of our Division program, but is supplemented by Title VII of the National Defense Education Act, which provides for research and dissemination of information in the new media. As you know, the Bureau also is responsible for research in adult and vocational education, under the provisions of the Vocational Education Act of 1963, as well as research for the handicapped and the development of films for the deaf. Here I should point out that Title VI of the Civil Rights Act of 1964 states that "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity receiving Federal financial assistance."

DIVISIONAL ORGANIZATION

Our Division of Higher Education Research has three Branches: the Research Branch, headed by Tom Clemens; the Comparative Education Branch; and the Curriculum Branch, headed by me. Because of your interests, I shall describe only the current programs of the Research and Curriculum Branches.

These two Branches in the Division of Higher Education Research provide support through contracts with and grants to colleges and universities, State departments of education, public or private agencies, professional organizations or groups, and to individuals after proposals have been reviewed and approved. Contracts only are authorized with profit-making organizations. The Research Branch stimulates, receives, and monitors research proposals which test hypotheses that will lead to new knowledge and the improvement of education. The Curriculum Branch has as its primary role the stimulation, identification, and support of promising innovative projects and programs leading to better instructional practices, improved courses and content, and exemplary curriculums.

Since many of you, I hope, will be submitting Cooperative Research proposals to us, you will be interested in the review process. As some of you know, the rate of approval for proposals received has not been high -- only about one in five is funded at present. Inadequate research design is a common weakness. Lee Burchinal's program in the Division of Research Training and Development will, I am sure, help here, just as your own California Junior College Research and Development Center will bring about better research.

In the past a large number of proposals have been submitted to the Office with little or no advance consultation with Office personnel who are in a position to give advice concerning the proposal. In many instances, advance consultation might have resulted in the preparation of a better proposal or perhaps none at all. Today, even with our skeleton staff, we are encouraging the submission of preliminary or draft proposals followed by Office review and assistance or guidance to the potential investigator. The draft may then be revised by the initiator and submitted as a formal proposal.

THE REVIEW PROCESS

In brief, here is the course that a formal research proposal must normally run if it is to be awarded the pot of gold at the end of the rainbow trail:

UNIVERSITY OF CALIF.
LOS ANGELES
NOV 30 1966
CLEARINGHOUSE FOR

CLEARINGHOUSE FOR
JUNIOR COLLEGE
INFORMATION

A formal proposal is mailed to the Research Analysis and Allocation Staff (RAAS), Bureau of Research, USOE. This staff examines the proposal and decides to which division it should be allocated. When it comes down to Division level, the proposal is again examined in terms of educational level and research or curriculum emphasis. Then it is sent to the Research Branch or Curriculum Branch or some other appropriate Branch for monitoring. In some cases, there may be joint monitoring. At the Branch level a qualified specialist is designated as project officer. He reviews the proposal and selects five or more field readers from a selected roster containing names of highly qualified specialists in various disciplines, research, psychology, administration, etc. The proposals are sent out to these readers, as well as being given to specialists within the Office of Education and/or other government agencies. These readers evaluate the proposal in terms of the following criteria:

1. Educational significance

2. Soundness of design or operational plan

3. Economic efficiency

4. Adequacy of personnel and facilities

Unfortunately many proposals are not approved because they seem to have only local significance, because they attempt to do what would normally be done in a local institution, because the investigator does not reveal his knowledge of present research and development and does not build on it, because the research design and evaluation procedures are inadequate, because the details of what is to be done and how the project is to be carried out are not clearly specified, and because the project is too expensive in the light of anticipated results or end product. Of serious concern to us is the fact that the institutions which need help the most are the ones which often submit poorly designed proposals. This fault could have been corrected in many instances if they had worked closely with persons sophisticated in research design and evaluation.

When the outside consultants return their reviews to USOE, the project officer makes an analysis of them and of the reviews by Government specialists. A site visit is made for projects over $250,000. The project officer develops a staff position on the proposal with the advice of the Branch. This position paper and a brief summary of the proposal are then presented at a weekly division meeting where the proposal is discussed in detail. The division then sends its position paper up to the Bureau's Internal Review Committee for their review a few days later. They make their recommendation to the Commissioner, who may refer proposals involving policy matters or amounts over $250,000 to his Research Advisory Committee for their consideration. As soon as the Commissioner recommends approval or disapproval, letters go out from the Branch to the initiator of the proposal. If it is approved, the Contracts and Construction Office begins negotiation of the contract, which may also involve a site visitation. When the contract is negotiated, the project is assigned to a branch specialist who is the project coordinator responsible for seeing the project through to its termination.

The coordinator is usually the project officer. He reviews periodic reports of progress, makes site visits when necessary, handles amendments, recommends approval of the final report, and oversees its distribution. In general, small proposals($9000 or less) are handled in the same way except that site visits are not made, and such proposals are not considered by the Research Advisory Council.

PRIORITIES FOR RESEARCH SUPPORT

As I indicated at the beginning, our Bureau is establishing priorities for support of research and curriculum development with the help of national leaders like yourselves. Reports of research needs as given in publications like your own Institutional Research in the Junior College, B. Lamar Johnson's Islands of Innovation, Basil H. Peterson's Critical Problems and Needs of California Junior Colleges have been particularly helpful.

Now I invite you to react critically to the priorities considered important by Mr. Clemens' Branch and my own Curriculum Branch. In a preliminary position paper specialists in and out of our office (H. E. Research Study Section) have identified the following priorities and activities as deserving of support. As you will note, many of them pertain to the junior college and are similar to some of the problem clusters listed in order of priority in Dr. Peterson's report on California junior colleges.

In general, the Division of Higher Education Research is interested in proposals (1) which lead to the improvement of instruction and learning, (2) which will promote and disseminate research findings and curricular innovations, (3) which will evaluate instructional offerings down to the departmental level, (4) which will study the processes of educational change, including the agents of change, motivations for change, and obstacles to the introduction and evaluation of innovations in the classroom. High priority is also given to proposals which will lead to an improved climate of learning for students, faculty, and administration in their interactions with one another.

I. The Faculty: Its total role, we believe, needs study: (1) how does the instructor affect his

students? (2) what does he contribute to life outside the campus? (3) how does he improve himself professionally? (4) how does he use student feed-back to strengthen his instruction? (5) how is he influenced by incentives and awards -- both intrinsic and extrinsic? The whole area of faculty preparation, selection, promotion, and in-service training needs study. Should the junior colleges, for example, continue to rely largely on high schools for recruitment of teachers of general education courses?

II. Study Courses: Flexible, independent programs which develop iniative, creativity, individuality, and scientific ways of thinking in college students are needed in institutions of higher learning. Such innovative programs should utilize modern techniques and tools of instruction, encourage self-discovery of knowledge, and allow individualized rates of progress. As John W. Gardner has said, our highly organized society requires original thought and effort, but actually discourages their cultivation. He asks, "How may we best prepare our young people to keep their individuality, initiative, and creativity in a highly organized, intricately meshed society? How may we rescue talented individuals from lowered aspirations . . . boredom, . . . and habits of mediocrity?

III. Interdisciplinary Approaches: In general education there is a need for model and experimental programs which interrelate humanistic and scientific knowledge and processes. Programs in general education should be articulated with the high school curriculum. Junior colleges, as you know, must study ways to articulate their academic programs with those of four-year colleges. Many institutions of higher learning have dichotomized their programs in technical education and the humanities through rigid requirements in major and minor areas of concentration. This is one cause of student unrest. Do we really need courses in Vocational English, Commercial English, Engineering English, and English for Hairdressers and Beauticians? My hunch is that a basic, sequential course in composition which is an integral part of the two-year college program would produce better results than our present program. I would refer you to Kitzhaber's research at Dartmouth, and to Research and the Development of English Programs in the Junior College, by Jerome Archer.

IV. The College Student: As I have suggested, we need to know more about him than was evident at Berkeley, Madison, and Cambridge, Massachusetts. For example, we need research and development programs which stimulate students to do research or manage research. We need to study fewer students in greater depth to determine their attitudes, interests, and capacities and then to use the results to revamp or renew our junior college curriculums. We need to translate the large amount of research knowledge we now have about students into action programs. Joint student-faculty committees have worked successfully at institutions like Antioch and Swarthmore in curriculum development and instructor improvement. We need to do research on changing student values, habits of mind, habit patterns, and short and long range social and occupational goals. Administrators, deans, and departmental chairmen need to develop programs to determine what various faculty members know about their students and what they do with this knowledge if and when they get it. And we need follow-up studies of our students when they go into business, industry, government and trades, just as we seek information about them when they transfer to other colleges.

V. Teacher Education: There is a real need for projects aimed at helping poorly staffed community and junior colleges, denominational colleges, and developing institutions re-examine their goals and curricula in terms of their student needs and abilities, to upgrade faculty and administrative competencies, to improve instructional facilities, and to strengthen their diagnostic and evaluative procedures. Student leaders state that good teaching is a lost art and is no longer valued by administrators.

VI. Curricula: The growing numbers of high school graduates seeking college admission, and their oft-times lower range of ability and academic preparation as well as their varied occupational and social goals, call for new curricula in community and junior colleges. A study of dropouts is not enough. New courses are needed. Colleges must also study the desires and needs of adults wanting both vocational and cultural courses during evenings and on Saturdays. Feed-back should be obtained from persons who have taken courses and it should be used to develop new or better courses.

VII. Institutional Development:

There is need for institutions of higher learning and/or groups of similar institutions to study their own purposes, student body, faculty recruitment and utilization, curricula, space and staff utilization, long-range responsibilities, library and laboratory facilities, administrative-faculty-student relationships, and other factors which relate to the effectiveness of the college and university.

Most important, perhaps, is the need to study the role of the college as it should be five, ten, and even twenty years from now. This, of course, involves population projections, technological changes, mobility of people, national and international needs, and the utilization of educational TV and computer assisted instruction. We need to know more about the ways educational technology affects teacher-student attitudes and relationships and what the machine can contribute to instruction.

VIII. Assessment: The last area I shall mention is evaluation. As I indicated earlier, there is

need to develop new tests and evaluation instruments at all college and university levels, particularly for entering freshmen and transfer students. At the prefreshman level, tests should be of two types: diagnostic and attainment. Diagnostic evaluation is needed because college course work should be individualized in terms of students' present knowledge, skills, and needs. Attainment or achievement tests are needed to prevent the widespread duplication and repetition of high school instruction found in undergraduate courses, especially for students who have graduated from superior high schools.

These are only a few priorities we have identified. We welcome your reactions and suggestions, as well as your carefully conceived and innovative proposals. All of them should build on present knowledge, should have broad significance, and provide for thorough evaluation of the project or program to be developed.

RESEARCH TRAINING AND DISSEMINATION

LEE BURCHINAL, Deputy Director, Bureau of Research; Acting Director, Division of Research Training and Dissemination

To explain this rather long title, the Division of Research Training and Dissemination is one of five Divisions in the Bureau of Research.

FUNCTIONS

I. Objectives

The Division has four major objectives:

1. Assisting in the development of research by giving support to projects concerned with the dissemination and diffusion of research results is a primary objective. Theory is basic; we are interested in critical factors involved in the process of dissemination, diffusion, and adoption.

2. We support various programs coming to us from other Divisions - projects aimed at disseminating new, exciting, emerging research findings, and testing new ways of getting the findings incorporated into demonstration projects. We are constantly seeking models with carefully built-in evaluation techniques.

3. Our largest activity just now is developing, operating and coordinating dissemination efforts initiated by the Office of Education itself or by its units. This includes such projects as ERIC (Educational Research Information Center), a developing network of research information clearing houses about which you'll hear more later.

4. And, not least, we administer the total education research training program.

II. Specialized Programs

A. Units carrying out the following four efforts do not reach out into the field:

1. Caption Films for the Deaf: developing educational and recreational activities for the deaf, providing training programs for teachers of the deaf, and conducting research in techniques of better educating the deaf.

2. The Educational Materials Center: a library and laboratory facility whose task is to keep track of every text or trade book published in the United States for all levels of education. It is supported jointly with the State Department AID program.

3. The Publications Unit: this encompasses the writers and editors who put out the OE reports.

4. The Library Research Project: a developing program of research in the use of libraries in education. Guidelines for this program will be released after Congress acts to provide funds for it.

B. NDEA Title VII-B

The Dissemination Branch, focussing on the process of diffusion and dissemination, encourages media research provided by Title VII-B of NDEA. This Title will support research directed toward acquainting people with and applying the new media in specific ways in education. The program has been broadened now to include all levels of education.

C. The Educational Research Training Program

This is a grant rather than a contract program whose purpose is to help institutions or organizations conduct their own training projects. We are developing and will make available to you guidelines for conducting educational research.

The procedure is that the institution presents a proposal stating its objectives and criteria, and then undertakes to conduct and select its own trainees. Six different types of projects have been identified in this program so far:

1. "Research participation" proposals for recruiting undergraduates into research work. These may involve honors programs with directed training and research experience to increase awareness of research for promising students, and leading hopefully to their eventual recruitment into graduate programs of educational research.

2. Graduate research training programs, considered crucial because they hold the longest-term promise. Interdisciplinary emphasis is considered an important factor. The program provides fellowships for M.A. and Ph.D. trainees in research.

3. Short-range Institutional Training Programs of six to eight weeks focussed on given topics and areas that would yield relatively immediate benefits.

4. Special Training Projects, usually workshops of three to five days duration, or involving ongoing programs with a two- or three-week summer session followed during the year by two- or three-day seminars. It is a flexible program.

5. Post-doctoral research retraining; this is an expensive and high-level effort; it would be appropriate to a PhD in Physics who has been selected to go into curriculum research work. He needs upgrading on the learning process, and this program will provide the training.

6. Program development, in which institutions will train their own recruits; this is a limited program.

D. The ERIC Project

Perhaps ERIC (Educational Research Information Center) best illustrates the kind of program we can get really excited about. This is a highly promising venture in the dissemination and diffusion of educational research. It will be a nationwide decentralized system linking researchers and practitioners and will speed research results to those who need it. It has a small central staff in Washington working on development and coordination. Each ERIC clearinghouse will process literature about a selected topic specialty. Nineteen such 'topic centers' are yisualized, and we are now accepting and screening proposals for their establishment. The CJCA-UCLA proposal is one of these. It would set up a clearinghouse for junior college research; it would collect and abstract documents and forward them to the central ERIC office which would issue monthly bulletins and take orders for individual abstracts. The Microphoto division of Bell and Howell has a contract to process documents in Microfiche at 9¢ per 4"x6" sheet-microfilm card. Paper copies of the material will also be published in pamphlet form by Micro Photo.

CRITERIA FOR REVIEWING TRAINING PROGRAMS

I. Program Rationale

We look for the program's significance and relevance to the field of education as a whole, its potential for producing people who will have value in education.

II. Program Procedures

Is the proposal interdisciplinary in terms of its subject matter and the instructors involved; does the proposed course work show a firm foundation in educational concepts (especially pertinent if it concerns areas outside education); are the tools and methods carefully selected; does the practicum describe adequate statistical methods, description, and analysis?

III. Staff and Facilities

We look closely at the background and experience of the proposed program's staff and faculty; how are trainees to be selected; what is their level of competence; what tools and methods will they use?

IV. Budget

We examine the proposed budget to see if it is economical, efficient, sufficiently detailed, and realistic.

PRACTICAL PROBLEMS OF FUNDING: A WORM'S EYE VIEW

SELDEN MENEFEE,* Government Affairs Officer, Los Rios Junior College District

The view of a worm has one advantage: it encompasses only as much as he can comfortably negotiate at a given time. I have observed that some research persons are so hypnotized by the vast panorama of knowledge and technical skill that are placed on display in published research reports, even in reports of rather slight research efforts, that they become confused and incapable of positive action. Every project, they come to feel, needs a computer, and the bigger the better. The proper researcher, they think, should be able to operate the computers and speak their language.

This I am convinced is a fallacy. I don't suggest that it's not occasionally helpful to be able to run your own machines, and to have certain technical skills. But of all the important educational research that still needs to be done, a great deal is probably not even suited to computerization. Sometimes insight, tempered by common sense and mastery of elementary statistics, can produce more useful answers than the most elegant mathematical manipulations of data.

WALKING IT THROUGH

In the Los Rios District this year we have had what may be beginner's luck, with two projects funded out of two proposals submitted. One of these proposals presented a design submitted by American River College for an ETV program in remedial English; it would be beamed simultaneously to high school seniors in the college district and to junior college freshmen who failed at entrance to qualify for college English (English 1A). American River's notion was that by exposing the students to a course in developmental English a year before college entrance, a significant reduction in the number of sections of college remedial English might be effected. We had been assured the full cooperation of a large unified high school district and of the local educational television station (Channel 6 KVIE) for the project. All we needed was financial support.

I happened to be in Washington last summer, working with the AAJC, and was able to explore the matter in person. I believe this is very important. The project, we felt, could possibly fit into the Elementary and Secondary program, in which case of course the high school district would have to be the initiator. Or it might be appropriate to the Vocational Education Act, but VEA research must be focused largely or entirely on problems of adult or vocational-technical education. Or it might better fall into the Cooperative Research program of the Higher Education Branch. A review of 857 projects funded by Cooperative Research from 1956 to 1964 revealed that only four grants had been made to junior colleges for research -- and all four of these were private colleges. I queried the Office of Education about this lack of research activity on the junior college level, and was told that only a few proposals had been submitted by junior colleges over the years, though research is badly needed in this sector of education. "We will be looking for junior college proposals most eagerly," said Dr. Richard Suchman, head of the Division of Higher Education Research. "We especially want to stimulate and support programs where the initiative comes from within, and which would lead to organic growth of a healthy sort in such areas as curriculum."

I visited all of the offices and chatted with the officers in charge. They were willing to take the time to discuss the proposal and they made valuable suggestions.

The project wound up finally as a Basic and Applied Research proposal, approved for funding by the Cooperative Research Branch of the Higher Education Division. (Incidentally, Dr. Arno Jewett was chairman of the committee which approved it.)

Among things I learned in Washington are these: If you can't make a personal visit, don't hesitate to send a preliminary letter of inquiry to the USOE about an idea you may have for a research or demonstration project. You'll get some advice on how to handle it. You will get assistance for any good idea. Your preliminary draft will be checked over informally for omissions, and the like. This should be done well ahead of deadlines, of course, as a letter can easily get lost on someone's desk at USOE.

* Now Unesco Consultant on Mass Communication for Government of India, New Delhi

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WRITING AN APPLICATION

On one occasion I went to visit Grant Morrison, then heading up the junior college office of USOE, to talk about what makes a "good application." He didn't offer to give me a magic formula, but he did tell me the main reasons why research proposals get turned down:

1. The applicant did not read the instructions carefully enough; he failed to follow them to the letter.
2. The proposal was not sufficiently innovative, it had nothing new to contribute to the body of research already done.
3. In writing the application, the applicant did not show familiarity with research already done in the same field.
4. The proposal was too general -- the exact questions to be answered were not pinned down, or a clear-cut, precise proposal for answering the questions was not given.
5. The research was too local, with little likelihood of being useful to other colleges in the state and nation.
6. The application did not establish the qualifications of the person or persons doing the research, or the availability of facilities, or evidence of cooperation from all those involved.
7. The Federal government had already used up its budget for this type of research.

There is nothing you can do about the last point, but you can watch the others.

ESSENTIAL CONDITIONS

I seem to be taking these points out of order, but that's the way they occur to me, and I hope you'll bear with it. The currently fashionable status enjoyed by research may lead some people to think if they employ a good writer who can follow the rules and use all the gimmicks required for project-writing that the results are bound to be favorable. This is not the case, of course. The Office of Education has some notably competent people on its payroll, who can easily spot a research proposal that has been "dreamed up" on behalf of a status-seeking administrator.

This, in summary, is the natural course of events for a fundable project:

1. There is a <u>felt need</u> to find an answer not previously available to a pressing question.

2. There has been a search of the literature for an answer to the question.

3. There is a clear formulation of a hypothesis.

4. A workable plan has been set forth for testing the hypothesis.

5. A practical means of organizing the project has been described.

THEN you submit your proposal. And you wait. And Wait. And WAIT. If it is turned down, you recast it and try again.

When you get your money, your troubles may only be beginning. A whole series of interesting pitfalls awaits you. These relate to the following problems, among others:

1. Leadership. You'll need a competent director, supervisor, or coordinator. Put the best person available on to direction of your project.

2. Staff: Your project personnel must be willing, able, and dedicated. Better to have the participation voluntary than appointive. There always seems to be someone who drags his feet: try to replace him.

3. The public: Community good will is often crucial to a public college project. In Sacramento recently, people were locking their doors and calling in the police when strangers knocked. This behavior accompanied a certain amount of public hysteria over what the newspapers had labelled a "survey rapist" whose habit was to knock on doors and announce himself as representing a "Sacramento State College survey." Upon admittance to a home, his conduct became less than exemplary. If Sacramento State College had in fact been conducting a public survey (which was not the case) it would have been well to keep the public fully informed. In another instance, this one involving a new junior college district, a premature news story was released on a project. The release became a weapon turned against and ultimately leading to the demise of what might have been a very worthwhile research effort.

A SPECIAL NOTE ON THE ERIC PROGRAM AT UCLA

ARTHUR COHEN, University of California at Los Angeles

Arthur Cohen, project coordinator of the UCLA-ERIC program, was a conference registrant. He responded to a request to give a brief progress report on that project, which will concentrate on the collection and dissemination of junior college information.

He said the program would begin in July 1966; it was approved for a three-year period at the outset. On the advisory committee for the center are Tom Merson (AAJC), Herbert Lee Swanson (El Camino College), Robert DeHart (Foothill College) Lamarr Johnson (UCLA), C. Robert Pace (UCLA), and two UCLA Library persons. The library will house the documents, he said, and its personnel will be intimately involved in the whole program.

The project has received the full support of the University. It will attempt a complete information service on junior colleges, will collect institutional research reports on junior colleges from all over the country, will have a selective mailing list for specific kinds of reports, and will attempt to include in its files copies of all dissertations and theses in the junior college field.

"We need," said Dr. Cohen, "three copies of your institutional research reports, and within a year and a half we will begin running 'demand reference services'. We are depending heavily on our ability to get the studies that have been done so far, so we can draw up guidelines and set up a format for reporting future studies." UCLA, he said, has 1500 junior college research studies on hand now, and the center wants as many more as it can get. He asked conference registrants to put these in a package and send them to him at the Department of Education, University of California at Los Angeles. He predicted the center would have "something of great value" within three years. The three copies of reports will be distributed as follows: one for the raw documents section, one for the center, and one to be forwarded to Washington.

DISCUSSION: THIRD SESSION

In answer to a question about a project which Mr. Menefee had referred to, involving interviewing non-college-bound and low-achieving high school seniors who showed academic potential, he replied the hypothesis was that these probationary students need a different kind or a more intensive counseling service, that such counseling would increase the probability of their success. Asked if the colleges concerned would adapt their programs to the findings of the study, if the findings suggested flaws in their present program, he said any institution which undertakes to request federal assistance in getting the facts on an issue pertinent to its functions should be prepared to adapt its program to the findings.

Junior colleges are currently facing a serious problem in deciding what kinds of entrance requirements and probationary standards are realistic and financially feasible.

Dr. Jewett was asked how much it costs the Office of Education to process an application. His reply: "That would make a good research proposal!" The CJCA Research and Development Committee has already run into the problem of cost, a member of the committee noted, and it has been encouraged to "go for smaller proposals" as a consequence.

Dr. Jewett observed that "We get more for our money with smaller proposals, but it is most important that sufficient funds are requested to insure that the iniator can carry the project through adequately."

The federal agency does not parcel out project-approvals by state quotas, but an attempt is made to get some kind of national representation and distribution. "We are aware and concerned," he said, "that the small colleges are just not able to come in and get the kind of help they need. Their faculties are teaching 18-20 hours a week, they serve on committees, they have no time to write out good proposals, and no funds on which to take the proposals to Washington for assistance."

<u>On Writing Proposals</u>: It was pointed out that specialists are not sent out from Washington to give assistance, but on request the Divisions in the O.E. will mail copies of the publication "Instructions for Preparing Proposals" to project writers. "We have our specialists read and criticize a proposal," Dr. Jewett said, "and then prefer to meet with you personally in our office before you go back to prepare your formal proposal." This is the usual procedure, he said, and added that while it does not guarantee a project's acceptance it does increase the level of probability.

It was estimated that the over-all batting average of approval to requests in the Bureau of Research is about 20-25% approval, for first-time submissions.

On Characteristics of High-Priority Projects: Asked for examples of programs that have received active support from his Division, Dr. Burchinal mentioned the Florida undergraduate corps, a summer research program offered in lieu of student teaching for which the State will certify students as researchers; and the New York State plan for ten campuses on which graduate students with M.A.'s will be trained in research methods.

About bases not yet covered in institutional research, Dr. Jewett said "We want proposals in the area of higher education. ERIC proposals are not all in, and we can't yet assess their range." The subject-matter of high-priority proposals includes studies of student unrest, high on the list of felt needs, improvement of curriculum, and ways of increasing student involvement in the evaluation and improvement of college instruction. "We have now only two staff members to handle a current list of 225 proposals," he said, "and since last September we have pushed through about 60 of these. But with the immense expansion of NDEA, the work will go faster."

What about characteristics of already-submitted projects that hold most promise in the area of training research workers? At the undergraduate level, the Florida proposal for an undergraduate research corps was cited as being innovative and promising. At the graduate level, many projects have been approved for major universities involving interdisciplinary activities, joint staffs, and clearly designed course sequences. In some cases students in the senior year are assigned to state departments of education or elsewhere to work on immediate practical problems, applying their training and research theory to present needs. The agency gets the benefit of the student's training, and he acquires knowledge of management and organizational problems. In other projects specified groups of researchers, such as state personnel departments, may be trained in specific skills like data processing. At New York State, ten campuses are tied in with the State Department of Education to produce middle-level researchers between the B.A. and M.A. All of these hold real promise.

Professional organizations somewhat comparable with the CJCA have also received assistance. The National Training Laboratory, Educational Testing Services, and others, have submitted proposals and received funding.

Small colleges need a good deal of help, and at present are getting very little. Cornell has developed a reciprocal arrangement with the Hampton Institute of Virginia involving exchange of resources -- cultural activities from Hampton to Cornell, faculty from Cornell to Hampton. Cornell offers an in-service summer institute for Hampton faculty, and also encourages student exchanges between the colleges. The danger here is the Big Brother concept, but fortunately both colleges are aware of it. Circulating top-quality professors in the Appalachia region holds promise for upgrading of instruction in these small colleges.

On ERIC: Concerning the information-clearing house project, only two of these are now functioning. One is at Ohio State University in what was originally the R & D Center for Vocational and Technical Education. An amendment to the existing contract was made in order to achieve the Clearing House status. The other is at the City University of New York; this is a clearing house for urban school personnel information, which will handle such topics as in-service programs, recruitment, salaries, teaching conditions, retirement, and everything in-between.

The question was asked of Dr. Burchinal: "What if I wanted to obtain all available information on criteria for an efficient occupational counseling program from kindergarten through college -- if I directed an inquiry to ERIC at Ohio State, what would happen? What would I get?"

Reply was that Ohio State would have to have nine months to get ready, first. By then the information-seeker would be able to get a thousand documents with general applicability to the subject. The Central Clearing House would put out monthly bulletins containing indexed materials that have come in during that month. You would scan this bulletin, he said -- "We may decide to include abstracts (if it's not too costly) and then, if you wish, you could write to Bell and Howell using an order form requesting ERIC Document No. Whatever, and you would get it back in a few days." The Ohio center will send out specified bulletins to specific audiences, but the Central Clearing House will have the more general information. Individuals as well as institutions will have access to this service. Ohio's contract reads, for example, that the center will respond to any individual or organization on the same terms as will the central office. The clearinghouses will become familiar with ongoing programs in their specialized fields, and will pinpoint research reports, but they will not make qualitative judgments. They will not be programmed or budgeted to do so.

Fourth Session: Sharing Research Ideas

Presiding: Leslie Wilbur, Coordinator of Junior College Training, University of Southern California

Associate chairmen: Benjamin K. Gold, Counselor and Research Director, Los Angeles City College
James Nelson, Dean of Instruction, Golden West College

A full morning was devoted to a group of separate reports, each given in two places at different times in order that conference registrants could attend at least two. Following are summaries of two of these meetings.

AN EXPERIMENTAL PROGRAM FOR 'LOW ABILITY' STUDENTS

BEN GOLD, Los Angeles City College Counselor and Research Director

Beginning with the Spring, 1964 semester, Los Angeles City College embarked upon an experimental program with a two-fold purpose: (1) to obtain information about the "low-ability" student in the hope that some characteristics could be found which would early identify the salvageable student, i.e., one whose low-ability is due to educational or cultural disadvantages that might be remedied in one semester, and (2) to impart to the low-ability student skills, knowledge and attitudes to aid him in finding his best place in society.

In the Spring 1964 semester, a group of 64 students was selected according to the following criteria:

1. Total SCAT entrance examination raw score of 39 or below (11th national college freshman percentile)
2. No previous college background
3. Below 22 years of age
4. Not educated primarily in a non-English speaking country

These students were required to attend a special program from 8 a.m. to 10 a.m. daily. They were given credit for a three unit English Fundamentals course and a three unit introduction to Psychology course, neither carrying transfer credit. Two instructors, one each from the English and Psychology departments, were assigned to the program and were given freedom to coordinate activities and allocate the class time as they saw fit.

It was felt that the primary function of this initial effort should be to gather and analyze appropriate data, while concentrating the teaching upon communication skills.

The experimental group had 40 females and 20 males; 49 were Negro. Forty of the group last attended a Los Angeles City High School. Almost all of the rest last attended high school in a Southern state. Fifty-eight completed the semester, 22 with a "C" average or above. Thirty-six reenrolled for the Fall 1964 semester; 8 attended the 1964 summer session.

I. On the basis of tests administered to the experimental group and a comparison group of students in a regular Psychology class, the following information about the experimental group was obtained:

1. Scholastic aptitude in verbal, quantitative, and non-verbal abstract reasoning when measured under timed conditions compares with that of the lowest 10-20 % of the general and college population. When time restrictions are removed, the scholastic aptitude distributions approximates that of the comparison group on a timed basis.

2. Average achievement level in basic skill areas of phonics, grammar usage, vocubulary, reading comprehension (timed and untimed), listening and lecture comprehension is comparable to that of the lowest 5-15% of the general and college population. Indications are that ability to relate the spoken word with pictures (non-reading picture vocabulary) is no better than reading vocabulary.

3. Need patterns for the group indicate that, relative to national norms, they tend to defer to others, want things well ordered, feel inadequate, stick with things, and like variety. They are not preoccupied with the opposite sex or with being regarded as a leader. Males do not tend to be strongly achievement oriented, females tend to be aggressive.

4. Value patterns indicate that both experimental group and comparison group have an above (national) average concern for humanitarian values, and below average concern for practical material values. Both groups show males having higher esthetic values and females placing a higher value on

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knowledge. The experimental group as a whole shows more concern for power, influence, and renown than does the comparison group.

5. Interest patterns show that the above average interests of the experimental group females are in social service, clerical, and computational activities, while their below average interests are in outdoor, mechanical, scientific, and musical activities. Experimental group males tend to have above average interests in social service, clerical, literary, artistic, and musical activities, while their below average interests are in outdoor and mechanical activities.

6. Problems in study habits and attitude patterns seem to center around goal setting, concern about scholastic ability, prestige values of college, and abilities in organization and self-expression.

7. In vocational aptitudes, the experimental group averages at or above the working population average in form perception, motor coordination, and manual dexterity. They rate below average in general intelligence, and in verbal, numerical, spatial, and finger dexterity aptitude measures. Only four of 58 scored high enough on the general intelligence factor to predict 2 or more years of college success.

II. On the basis of responses to questionnaires administered to the two groups, the following statements may be made:

1. The experimental group differs from the comparison group in that its families are generally larger, more males are self-supporting, more fathers are in unskilled and semi-skilled jobs, more mothers are working, family income is lower, fewer parents graduated from high school, families are less interested in cultural activities and more interested in religious activities, political leanings are more conservative.

2. Experimental group students generally attended and graduated from one high school, usually in a city, either in Los Angeles or a Southern state. Only one in ten admits to graduating in the lower half of his class. Most are apprehensive as to how well their high school prepared them for college. Half state that their high school was segregated racially.

3. The experimental group claimed to have less trouble deciding on a major than the comparison group, appear to have decided more recently, generally made their own decisions, with a sizable number of parents not aware of the decision. Most want 4 years or more of college, especially the males, but tend to want more than they think is required for their desired occupation. They indicate "preparation for a job" as most important in attending college, and "becoming a well rounded person" as least important.

On the basis of a test-retest administration, a test of English Expression was found to have possible predictive value as far as grades in English are concerned, while listening comprehension was more predictive of grades in Psychology. There is evidence that predictors of success vary, not only with the course subject matter, but also with the sex of the student. Other tests show promise of use in prediction, but further evidence is needed. Tests of achievement in specific areas related to academic performance appear to be more predictive than tests of general aptitudes and motivational or personality characteristics.

Some evidence is presented that removal of the "low-ability" students from transfer courses helps in maintaining the integrity of the transfer courses.

III. The data presented in the study appear to justify the following conclusions:

1. The experimental group as a whole appears to have neither the academic aptitude nor achievement level to perform adequately in college level courses. However, there are indications that in situations where (a) time pressure is not a factor, (b) non-verbal mental ability is a relevant aptitude, and/or (c) thinking about problems and situations well-known to them is involved, these students perform at a level above that indicated in the conventional scholastic aptitude tests.

Furthermore, the fact that the beginning reading and/or vocabulary level of many students far exceeds their SCAT score suggests that the SCAT score alone may not be adequate for selecting students for probation or this special program.

2. The relatively high percent receiving a "C" average or above and the relatively low dropout rate suggest the value of the program to the students. Although they were required to

withdraw from the college if they dropped any part of the program, there did not appear to be any discontent. There may even be value in requiring them to finish the semester since such a requirement forces them to face the reality of their performance in academic activities. The high morals and group ("one big family") feeling may also have a negative aspect in that regular classes taken the following semester do not provide the same support, which may be a significant factor in their success in the program.

3. The need pattern of this group indicates potential conflict with the college milieu. Requirements for successful performance in the college setting are in strong contrast to the group's above-average need to follow others, have things well planned for them, to feel inferior and inadequate, and to fail to take on leadership roles.

Attending college for its prestige value by this group is further indicated by a value orientation toward power and influence. The low practical and material orientation (normally high for college students) combined with an above average orientation to humanitarian values may together reflect some of the unreality of these students' situation in college and their possible attempt to resolve their cultural conflicts through the medium of an educational institution.

4. Considering interest and occupational aptitude patterns, one finds the females possibly more likely to be successful than the males. The females' higher interest areas of social service, clerical and computional activities more closely match their abilities. The males show low interest in outdoor and mechanical activities (where their aptitudes lie) and high interest in artistic, literary, musical, social service, and clerical activities (where their aptitudes do not appear to be strong).

5. Analysis of responses to the questionnaires completed by the experimental group and the comparison group reveals greater differences in males than in females. The experimental group males appear to have present and potential conflict problems in academic adjustment since they:

a. are less likely to live with parents
b. depend on working for support
c. desire more education than they see necessary for their potential jobs
d. are more apprehensive about their preparation for college
e. feel they learned how to study in high school yet have difficulty in remembering
f. feel more dissatisfaction with previous teachers
g. tend more frequently to come from Southern segregated schools

In addition, the experimental group as a whole appears to have factors working against them as they:

a. tend to have more people in the home
b. had an easy time in selecting a major requiring two or more years of college and feeling confident they will complete it, while at the same time admitting to having difficulty in understanding themselves. Compounding this problem is the fact that 40% "don't know" their high school graduation ranking
c. tend to have preference for academic subjects, yet feel (and are) least prepared in English and mathematics
d. tend to spend slightly more time in extra-curricular activities
e. tend to have studied less in high school, but feel their reading speed is fairly fast
f. tend more often to have mothers working, fathers in lower socio-economic occupations, both parents with less education and less attendance at cultural events

6. Performance in college level work of those students who continue must be evaluated at a later date. Preliminary data, however, indicates the following tentative observations:

a. a much higher percentage of Negro students than Caucasians registered for the second semester, although grade point average in the program was higher for the Caucasians
b. about the same percentage of males as females registered for the second semester
c. compared with probationary students in past semesters, the experimental group showed a higher retention rate, a higher percentage with a "C" average above, and a higher percent enrolled for the second semester
d. compared with the entire student body, the experimental group showed a higher retention rate, a lower percentage with a "C" average or above, and a lower percent enrolled for the second semester.

THE CENTER FOR COLLECTION, SYNTHESIS, AND DISSEMINATION OF CAREER INFORMATION

MARTIN GERSTEIN, Guidance Coordinator, San Diego County

The Regional Center for the Collection, Synthesis and Dissemination of Career Information for Schools in San Diego County was established as a pilot project funded in part by the Vocational Education Act-1963 on February 1, 1965. The pilot phase of the project will extend to June 30, 1966 at which time it is hoped that a second, developmental, project will be undertaken to extend and improve the activities undertaken during the pilot phase.

The participating schools in the pilot activity include the six junior college institutions in San Diego County: Grossmont College, Mesa College, Mira Costa College, Palomar College, San Diego City College and Southwestern College and the Department of Education, San Diego County. Many agencies and institutions are participating in the first stages of development of the project. Prominent among them are: the California State Department of Employment, San Diego State College, and Hospital Council of San Diego.

PILOT PROGRAM

The pilot program is divided into two phases:

I. Phase I

Phase one began on February 1, 1965 and ended on December 1, 1965. Some of the activities in this phase included the Collection and Synthesis of Occupational Information based upon student and counselor perceptions of which occupational information is of most worth and the preparation of data about 55 occupations in the area of hospital careers; the development of a system of dissemination and retrieval which is workable, efficient and relatively inexpensive and the preparation of ancillary materials such as VIEWPOINT, a document prepared by counselors which describes entry employment in San Diego for use in the counseling process.

A. Occupational Information Questionnaire

This questionnaire, directed to counselors in San Diego County junior colleges, is divided into four parts, containing varying numbers of items to be ranked in order of importance by 30 counselors. Part I asks, "What information about occupations is of most worth?" and includes Descriptive information; Requirements (Personal, Preparation, Special Entry); Economic information (Economic Returns); and Geographic area covered by the information. Part II asks, "How can occupational information be prepared in a meaningful way?" It covers such considerations as style and format of the material. Part III asks, "How can occupational information best be disseminated?" and it lists various media for dissemination. Part IV asks, "In using occupational information, how important are these items of general information?" (basic requirements for entry, economic information, descriptive, geographic, media, and style and format).

II. Phase II

Phase two, which will continue until June 30, 1966, centers on the experimental use of VIEWSCRIPT material produced on microfilm aperture cards and placed in the schools for use by students seeking occupational information and counselors advising and counseling students to better educational and vocational decisions. Careful evaluation of the efficacy of the material will take place. Evaluation instruments will be simple and brief and will be designed to help refine the content in future revisions of the card material. Further, the evaluation will look at the equipment from the point of view of ease of use and acceptance by students and faculty alike. (The pilot run includes information about 55 occupations which are available in hospitals in San Diego County. This information is reported on 165 aperture cards and includes viewscripts, bibliographic trailer cards, and human resource trailer cards.)

FUTURE ACTIVITIES

The future activities of the center (for school year 1966-67) will include expanding the VIEWSCRIPT concept to every occupation (non-baccalaureate) for which training is available in San Diego County public schools, the expansion of the summer Career Guidance Workshop, a major follow-up of graduates of local secondary school technical and vocational training programs, and the inclusion of selected secondary schools to receive the VIEWSCRIPT materials.

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Each school will receive for the period of the pilot run:

1 Filmac 100 Microfilm Reader-Printer
1 DuKane Microfilm Reader
1 Flash Filing Tray for Microfilm Aperture Card Storage
2 Sets of 165 Microfilm Aperture Cards
2 Copies of VIEWPOINT - 1965

Equipment will be serviced, and chemicals and paper for use in the Reader-Printer will be provided by project funds. All counselors will be instructed in the use of the equipment and the interpretation of the VIEWSCRIPT Aperture Card (see Appendices B and C). Each Reader-Printer and each reader will have clear instructions regarding their use mounted on the machines so that students can use the equipment by themselves.

USAGE AND EVALUATION

It is expected that the equipment and card file will be placed in the counseling center and used in the counseling center.

For the first month students should be allowed access to the cards and equipment. After counselors and advisors become thoroughly familiar with the cards and equipment direct access should be encouraged. If there is a counseling clerk, she might be trained to check out VIEWSCRIPT aperture cards to students.

Some student groups who should be encouraged to use the center include:

a. All students in beginning Psychology courses
b. All students who are Medical Service curriculum majors
c. Students in certain Business programs
d. Students in certain Trade programs
e. Undecided students requesting career information (particularly on bibliographic trailer cards)

One way of evaluating will be to ask that a brief check list be completed each time an aperture card is used. This will be accomplished by a simple, direct half sheet list which can be completed in less than a minute.

Structured "compare and contrast" interviews will be conducted by staff members of the County Department of Education with individual students and with groups of students and with counselors and advisors.

Some classes in the medical service program in each school will be asked to react to "ditto" type copies of the information in their particular area of occupational training.

Counselors, California Department of Employment personnel, national authorities in the area of vocational guidance and community advisory personnel will be asked to assist in the evaluation.

CLOSING REMARKS

A. ROBERT DeHART, Conference Chairman

Dr. DeHart expressed his appreciation for the active participation of Conference registrants in this meeting. He announced that approval had been granted for federal support of two CJCA-sponsored research institutes this summer; these will be four-week sessions in July and the focus will be on research methodology. They will be conducted at UC Berkeley and UCLA, and each workshop will enroll 25 to 30 persons. A stipend will be provided of $75 a week plus dependent supplements and transportation costs. The Committee on Research and Development expects to go beyond California for at least some of the registrants.

The chairman also announced that preparations would begin soon for next year's conference; this might be a departure from the format of the first two and be a two-to four-day workshop instead of a conference, with section-leaders selected from among nationally-known institutional research workers.

APPENDIX 1: CONFERENCE REGISTRANTS

Institution	Representative
American River	Mrs. Audrey Menefee, Coordinator of Research
Bakersfield	Orral Luke, Director of Institutional Research
Cabrillo	Malby Roberts, Dean of Counseling and Records
C.J.C.A.	Thomas Merson, Director of Research & Development
	Henry Tyler, Executive Secretary
Calif. State Dept. of Educ.	Gerald D. Cresci, Acting Chief, Bur. of J.C. Adm. & Finance
	R. Sweigert
Chabot	John R. McKinley, Dean of Instruction
Chaffey	R. Wignall, Director
Chevron Research	Donald Krotz, Vice President
College of San Mateo	William Goss, Assistant Superintendent & Vice President
College of Sequoias	Lincoln H. Hall, Dean of Student Personnel
	Richard Jacobsen
Compton	Robert A. Mortenson, Dean of Instruction
Contra Costa	Jack Bessire, Director of Research and Planning
Coord. Council for Higher Education.	Courtland Washburn, Fiscal Specialist
	C. McIntyre
Diablo Valley	John I. Carhart, Dir. of Inst. Research and Planning
Foothill	A. Robert DeHart, Dir. of Inst. Research and Planning
	Thomas Clemens, Asst. Dir. of Inst. Research and Planning
Grossmont	C. Stanley
Hartnell	Duane Sandgren, Dean of Counseling Services
Imperial Valley	T. Spencer, President
Los Angeles	
East L.A.	Leadie M. Clark, Coordinator
L.A. City	Ben Gold, Counselor
L.A. Harbor	J. R. Nicklin, Asst. Dean of Evening Division
L.A. Valley	Fred Machentanz
Los Rios District	Selden Menefee, Government Relations Officer
Marin	I. P. Diamond, Dean of Students
Merced	Loren R. Irwin, Dean of Student Personnel
Modesto	Bert Anderson, Vice President - Student Personnel
	F. Pearce
Monterey Peninsula	John R. Blakemore, Dean of Student Personnel
Mt. San Antonio	Max D. Bell, Deputy Superintendent
Napa	Mrs. Virginia Murdoff, Dean of Guidance Services
Orange Coast	Frank O. Hopkins, Dean of Research and Planning
Pacific Research Center, Inc.	George Ebey, President
Palo Verde	Stuart M. Bundy, Director of Instruction
Pasadena	Mrs. Jessie Chittenden, Dean for Placement
Peralta	Robert L. Wynne, Asst. Dean of Admissions and Records
Reedley	Robert Clark, Counselor
Merritt	Catherine Farley, Chairman, Research Committee
Porterville	Lee Clearman, Dist. Coord. of Curriculum and Research
San Diego City	R. Miller
San Diego County	Martin Gerstein, Guidance Coordinator
San Francisco City	Thomas Nesbitt, Dir. Testing, Research and Guidance
San Francisco State	G. Champion
San Jose City	Perc Bliss, Vice President
	Clifford Transeth, Associate Dean, Extended Day
Sierra	A. M. Akers, Vice President
Southwestern	Carl Black
State Center: Fresno	Lawrence Martin, Asst. Dean of Evening College
Stockton	M. K. Bandley, Administrative Assistant
UCLA	Arthur Cohen
	C. Robert Pace
USC	Leslie Wilbur
U.S. Off. of Education	Arno Jewett, Acting Chief, Curr. Branch, Div. HE Research
	L. Burchinal, Deputy Director, Bureau of Research
Ventura	Robert Stone, Asst. to Superintendent
Yuba	D. Conroy

APPENDIX 2

SOME MATERIALS DISTRIBUTED AND DISCUSSED AT THE CONFERENCE

Source	Description
American River College	A Proposed Program for Supervision of Instruction in Public Junior Colleges Profile of a Junior College Faculty: Instrument & Summary
Cabrillo College	Cabrillo College Environment Study
College of San Mateo	Health Education by Educational Television: a Preliminary Evaluation Planning for Instructional Television
College of the Sequoias	Academic Success of (a selected group of) First Semester Freshmen
Contra Costa College	A Comparison of Test Scores Between Students in the Contra Costa College Nursing Degree Program and in the Kaiser Nurse Program Follow-up Instrument for Non-returning Students
Foothill College	Instructional Load Study Faculty Characteristics Grade Analyses
Glendale College	Study on Student Characteristics
Los Angeles City College	An Experimental Program for 'Low-Ability' Students (full report) Implementing a Curriculum for Provisional Students Inter-divisional Dialogue on Propriety of Junior College "Salvage" Function
Los Angeles Harbor College	Interim Report of the Harbor-'65 Study, and Institutional Research Project Evening Division Drop-out Study
Merritt College	X-Ray Technology: A Study of Merritt Students in Three Different Levels of Training
Modesto College	A Proposal Submitted to USES for a Test Research Program Modesto Multi-Occupational Project: Research Report #1: Background #2: Dropout Rates #3: Analysis of the Testing Program - MDTA Project
Office of Education, Division of Research Training and Dissemination/Bur. of Research	Educational Research Information Center: Advance Information
Orange Coast College	Withdrawal Survey for Fall 1965 Comparison of California Junior College Active Enrollments with the Orange Coast District Enrollment, Fall 1965
Pasadena City College	Research Studies and Reports (listed to February 1966)
Reedley College	Persistency Studies at Reedley College
San Joaquin Delta	Source of Students at San Joaquin Delta College 1965-66
San Diego County Schools	Full report: Regional Center for Career Information
Ventura County JC District	Selected Financial Data, Southern California JC Districts
West Valley College	Counselor-Counselee Ratios in California Junior Colleges